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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

MEMBER ABP

MARCH, 1940

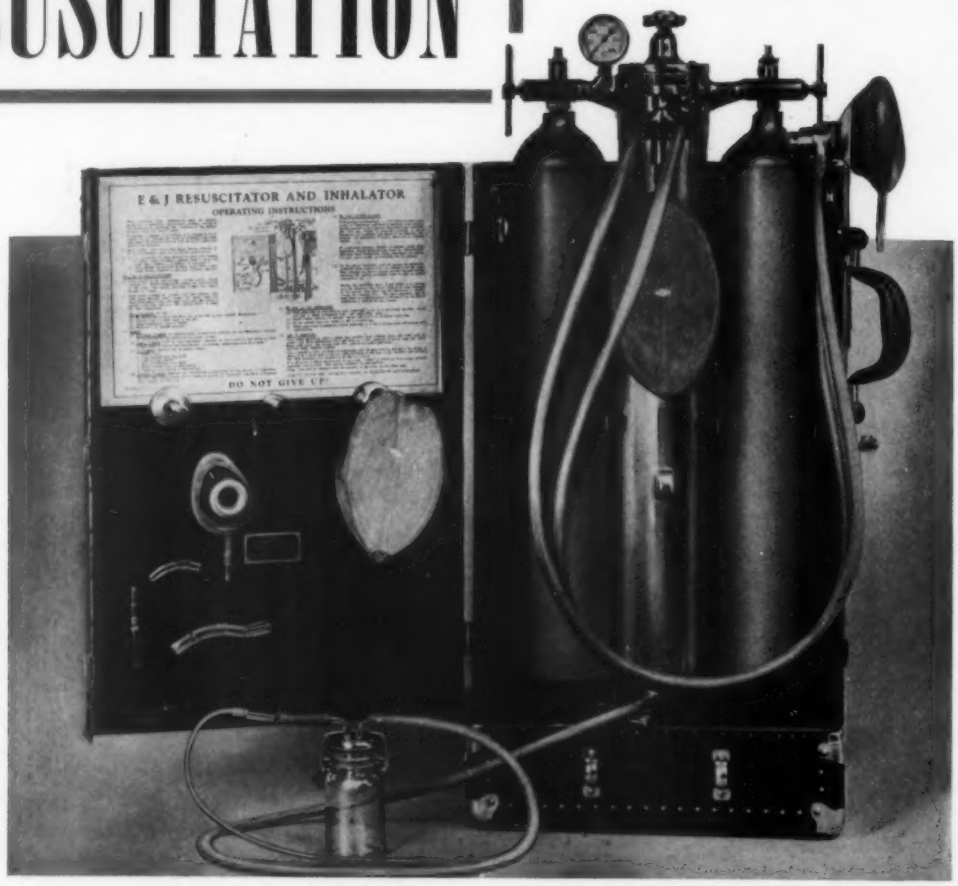
Vol. 93, No. 3

The Start of a Multiple Alarm Fire in the Downtown Business District of New York

The Newest Development in

MECHANICAL RESUSCITATION

The E & J Resuscitator and Inhalator Emerson Model
Eastern Built for Eastern Users



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That is how we have definitely confirmed the effectiveness of automatic, pressure-control respiration in cases of the third and fourth stages of asphyxia.

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WM. H. STEPHENSON, MANAGER
101 PARK AVE., NEW YORK TELEPHONE: ASHLAND 4-4660

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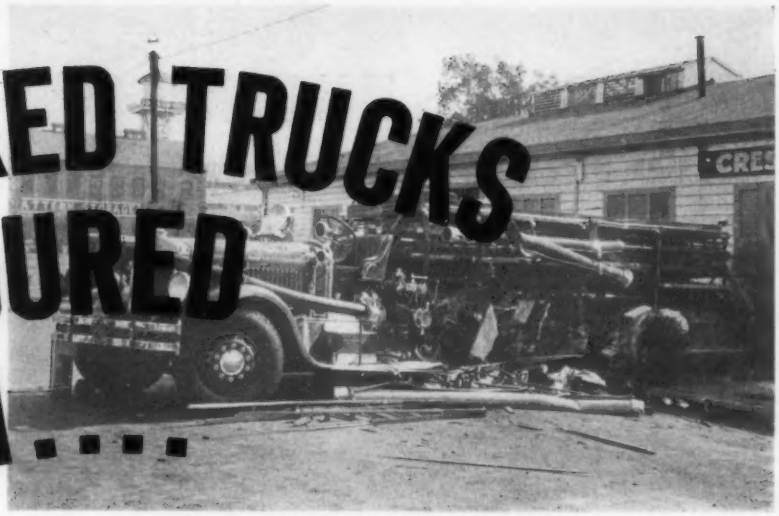

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A powerful siren on carefully driven apparatus minimizes these hazards and speeds response!

The best in visible and audible warning is combined in the Traffik-King.

The cost of the finest Traffik-King is nothing compared to the cost of destroyed apparatus. LOST LIVES ARE BEYOND VALUATION.

PROTECT lives and property . . .
PROTECT your fire equipment . . .
PROTECT your departmental reputation . . .
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FEDERAL SIRENS

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TRAFFIK-KING

Combination Siren and Oscillating Light

Model C-6 →

OUTSTANDING FEATURES

- Oscillating light operated independently by its own motor.
- Oscillating light has no external moving parts to jam or freeze.
- Siren coasts for 3 minutes after current is cut off.
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- Produces the utmost in siren performance.

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8702 SOUTH STATE STREET CHICAGO ILL.

A Consolidation of
FIRE AND WATER ENGINEERING,
THE FIRE ENGINEER and
FIRE PROTECTION

FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

FRED SHEPPERD
Editor
N. N. WOLPERT, Assistant Editor.

A Convention Summer!

ON page 139 of this issue, FIRE ENGINEERING lists no less than fifty-five fire conventions already scheduled for 1940.

● Twenty-six of them are set for the three summer months of June, July and August, including the big New England Association of Fire Chiefs at Dixville Notch, N. H., June 25-27, and the nationally important I.A.F.C. at Spokane, Washington, Aug. 5-8.

● With all this activity, FIRE ENGINEERING becomes more important than ever as an authoritative mouthpiece of the profession, more useful both to its readers and to its advertisers—the manufacturers who are doing so much to advance the technical and mechanical standards of the fire field.

● We hope you will depend upon this publication more and more to help along this vital work.

The Publishers

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A Complete Fire Department in One Compact Unit for Fighting Roof, Chimney, Room, Partition and Building Fires!

50 FT. STREAM--- USES CLEAR WATER--- QUICKLY REFILLED--- PORTABLE BY HAND OR ON THE BACK

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New Market, N. J.

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Gentlemen — We find our four INDIAN FIRE PUMPS more than satisfactory for the many calls we have fought with them. In closed places in buildings, chimney, attic, roof and room fires they are just the thing. INDIANS save time and labor and are a highly necessary part of our equipment.

Carl Newton, Fire Chief

INDIANS are built strong of quality materials to withstand hard usage. May be had with galvanized or brass tank or complete unit chrome plated. Truck carrying racks available.

A DIFFERENT USE EVERY DAY

Make short work of those troublesome Class A fires with INDIAN FIRE PUMPS. Fast action. Low cost. Easy operation. You will be surprised at the great variety of uses for which INDIANS are just the thing. Ideal for "Mopping up."

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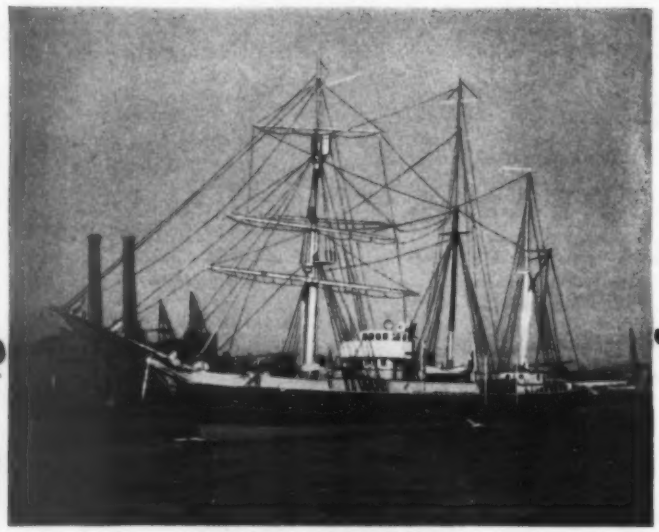
Once again!

MANHATTAN Fire Hose

Goes to the Antarctic Continent with Byrd



Admiral Byrd's flagship—THE BEAR

For the second time, MANHATTAN Fire Hose was selected to protect Admiral Byrd's South Pole Expedition.

Far away from outside help, equipment must be reliable —and we consider this selection of MANHATTAN Fire Hose a repeated tribute to its dependability—and an honor to be accepted as a trust to continue making the best fire hose possible with equipment and facilities kept abreast of every development and improvement.

MANHATTAN Fire Hose is used by municipal fire departments throughout the country. Every length is pressure-tested at the factory.

Sole manufacturers of Radio-Active Treated Fire Hose —mildew-, rot-, and freeze-proof.

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EXECUTIVE OFFICES and FACTORIES, 52 TOWNSEND ST., PASSAIC, N. J.
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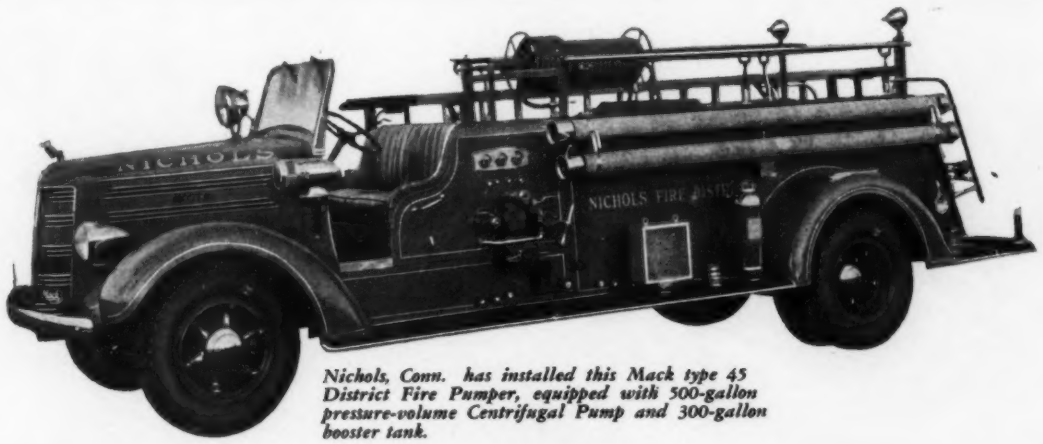
FOR SMALLER COMMUNITIES AND FIRE DISTRICTS



Nichols, Conn. has installed this Mack type 45 District Fire Pumper, equipped with 500-gallon pressure-volume Centrifugal Pump and 300-gallon booster tank.

Mack type 45 District Fire Pumper serving Winsted, Conn. Equipped with 100-gallon booster pump and 100-gallon booster tank.

Mack PRESENTS THE DISTRICT FIRE PUMPER

Here's big news for smaller communities and fire districts! Apparatus designed specifically to do their type of fire fighting—built entirely by Mack to the highest quality standards; yet priced to fit limited budgets.

The new Mack District Fire Fighter models range in pumping capacity from 100 to 500 gallons per minute, and are equipped with booster tanks carrying 100 gallons of water or more. As shown in photos above, the District Fire Pumper comes with open or inclosed cab.

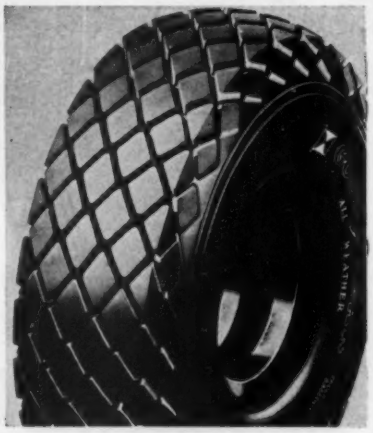
In efficiency, in dependability and in stamina, these new Macks are equipped to do an outstanding job for *your* community. Write today for full details and specifications.

MACK MANUFACTURING CORP., NEW YORK, N.Y.

FIRE ENGINE DIVISION

RIGHT NOW...YOU NEED ITS GREATER SAFETY

WET, slushy winter streets now make sure-gripping, road-holding tires more important than ever. And now you get more safety than ever before in the new 1940 edition of the famous Goodyear All-Weather — *the world's most popular truck tire.* New improvements in engineering, construction and material make it a tougher, sturdier, more compact tire—a longer-wearing tire that gives you more safety-mileage with greater immunity from road hazards. At its new low price you will find it more than ever true today: *Goodyear tires are as good as you think, but cost far less than you imagine!*



THE NEW 1940

GOODYEAR

All-Weather

The only truck tire with these three great safety features:

1—**"MULTIPLE" COMPOUNDING**—provides stronger bond between tread and body—makes tires more resilient.

2—**LOW STRETCH SUPERTWIST CORD**—stronger, more resistant to bruises and blowouts—less heat-generating bulk.

3—**FULL TRACTION TREAD**—sharp, deep-cut diamonds from shoulder to shoulder resist skidding on ice, slippery pavements and corners.

SAFETY INSURANCE

For complete protection against the danger of blowouts install

LIFEGUARDS

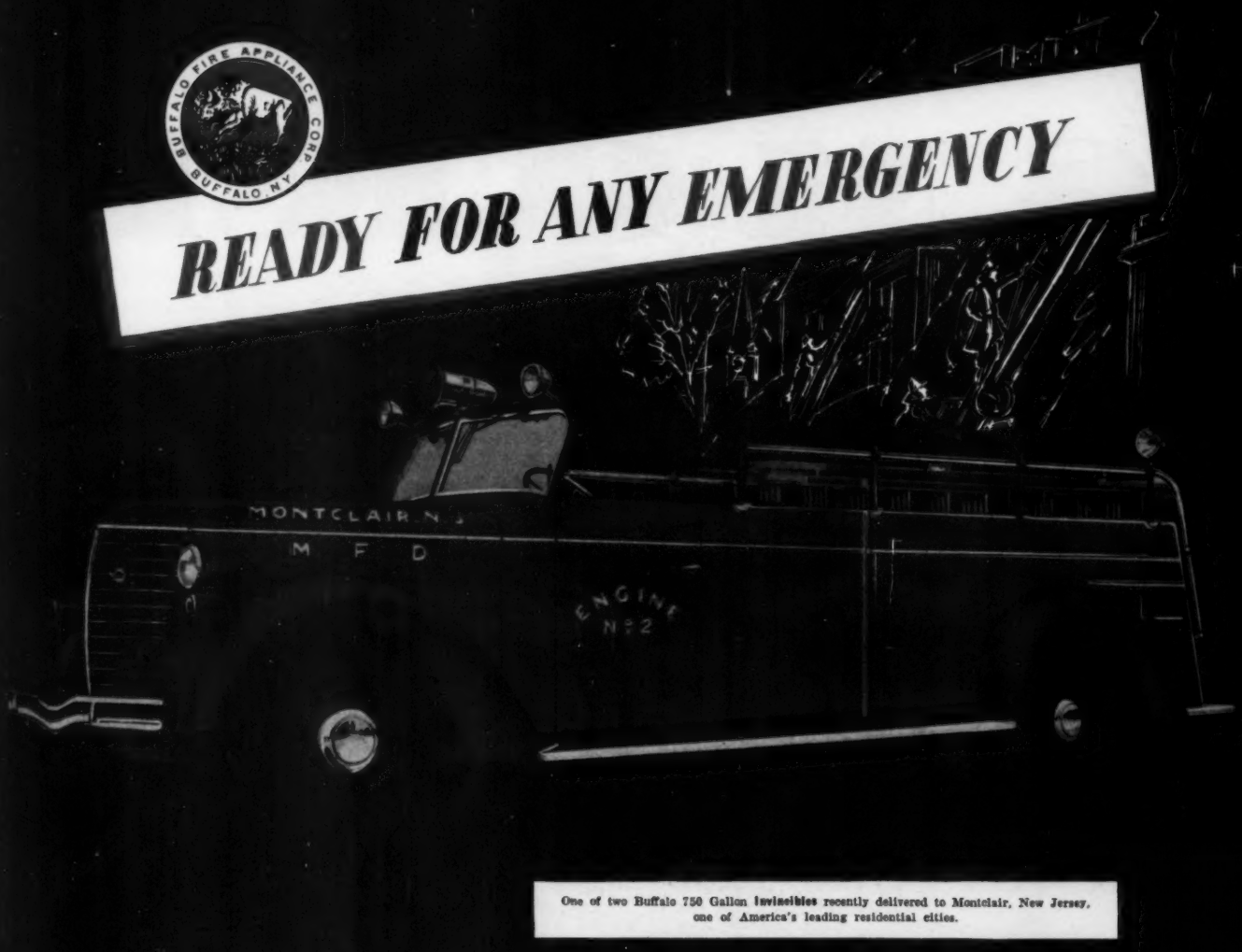
—the modern successor to inner tubes.

THE GREATEST NAME IN RUBBER

GOODYEAR

All-Weather, Supertwist, LifeGuard—T.M.'s The Goodyear Tire & Rubber Company

READY FOR ANY EMERGENCY



One of two Buffalo 750 Gallon **Invincibles** recently delivered to Montclair, New Jersey, one of America's leading residential cities.

Is *your* fire-fighting equipment ready for any emergency?

There will be no question about it if you modernize your department with Buffalo Better-Built Apparatus, just as Montclair, N. J., and many other cities throughout the country are doing.

Here is fire apparatus at its best—in performance, dependability, unfailing service and outstanding appearance.

If you are planning the purchase of new apparatus this year, write for complete information on these Better-Built Pumpers.

We shall also be pleased to send you our Wall Chart on Simplified Hydraulics at your request. EVERY fire department should have a copy of this valuable chart.

BUFFALO FIRE APPLIANCE CORPORATION

44 CENTRAL AVENUE, BUFFALO, N. Y.

BUFFALO *Better-Built* FIRE APPARATUS

SMOKE ...a threat to Life and Property

Theater Manager Prevents a Panic

Panic among 400 to 500 children attending a matinee at the Dexter Theater, 11614 Dexter, was averted at 3:30 p. m. Sunday when Edward J. Bonnville, the theater manager, flashed on the auditorium lights to reassure the youthful audience that there was no fire in the building.

Police said that smoke from a rubbish fire in an adjacent alley was sucked into the auditorium by an air-conditioning fan. One youngster, smelling the smoke, jumped to his feet and shouted, "Fire!"

There was a brief scurrying for exits by those near the doors, but the excitement subsided soon after Bonnville had turned on the lights. Bonnville lives at 3011 Virginia Park.

● Fortunately, the threat cited here ended happily. But it vividly suggests how simply and quickly tragedies can develop, unless special precautions are taken to safeguard against particular hazards associated with air duct systems.

The National Board of Fire Underwriters says in a recent pamphlet, "Smoke Hazards in Air Conditioning Systems": "Effective means of detecting and controlling the spread of smoke in air conditioning systems is especially necessary in premises where the panic hazard is pronounced, or where the probability of smoke damage to contents is considerable...Such loss figures as are available indicate that the average loss per air conditioning fire is very high, approximating $22,000."

To combat the hazards attendant in air duct systems, A.D.T. has developed *Automatic Fire and Smoke Control for Air Duct Systems.* This protection has proved its effectiveness in theatres, department stores, institutions, industrial plants, and other types of establishments where panic hazards exist or where contents are especially susceptible to smoke damage.

We shall be glad to send you our booklet describing these A.D.T. services.

A. D. T. AUTOMATIC FIRE AND SMOKE CONTROL FOR AIR DUCT SYSTEMS

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York, N. Y.*

CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A·D·T *Electric Protection Services*

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

LIKE *Extra* HOSE LINES

• • • THESE RESERVES COUNT IN FIGHTING FIRES

Think of the many emergencies that call for reserve speed to gain precious minutes in getting to the fire faster — reserve power to flatten out a steep grade — reserve traction to pull through snow or mud-blocked streets — reserve safety for fast travel on wet, slippery pavements without hazard to pedestrian or other traffic. Any fire is an emergency and that's why your fire-fighting equipment needs the reserves — the plus performance factors that are always there in ample measure in FWD apparatus.

Cities from coast to coast rely on FWD apparatus for these important reserves of extra safety and performance. Available in a complete line of fire trucks with rotary or centrifugal pumpers in triple or quadruple combination, aerials, etc. Write for literature.

THE FOUR WHEEL DRIVE AUTO CO., *Clintonville, Wisconsin*
Canadian Factory: **KITCHENER, ONTARIO**

Two FWD Model KSU—1,000 gallon per minute triple combination pumpers recently delivered to the city of Dubuque, Iowa. Built on a 180" wheelbase and powered by a 200 horsepower engine, this unit delivers 1,000 gallons of water per minute at 150 pounds pressure; 700 gallons at 200 pounds; 500 gallons at 250 pounds pressure. A booster tank located in the hose body has a capacity of 300 gallons. 1,200 feet of 2½" fire hose are carried in the hose body.

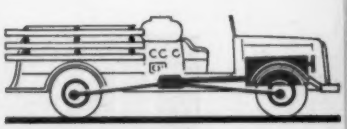
Reserve — SPEED POWER TRACTION SAFETY

FWD

QUICK, POSITIVE STOPS FOR ANY EMERGENCY

Two separate and independent four wheel braking systems with brake drums on each wheel are a feature of all FWD equipment. These two super braking systems, combined with a properly balanced weight distribution, provide the most effective braking ability possible.

HIGH SUSTAINED SPEED — GETS TO FIRES QUICKER



Quick response to alarms requires high sustained speeds with safety. Slippery streets, corners and other hazards that reduce speed are minimized through more positive driver control, making higher average speeds possible without increasing top maximum speeds.

GETS TO THE FIRE QUICKER AND SAFER

GAMEWELL VITAGUARD

THIS system has proved itself most effective and economical in communities having volunteer fire departments or whose fire alarm requirements call for one alarm box circuit which can be divided into two sections . . . or loop circuits.

The element of maintenance cost has been practically eliminated in the VITAGUARD System and there's nothing about it that needs manual control or winding.

EXPRESSLY FOR VOLUNTEER FIRE DEPARTMENTS AND INDUSTRIAL PLANTS

If your community wants a dependable, low-cost fire alarm system send to Gamewell for the VITAGUARD book . . . it is fully illustrated and gives plenty of installation data.

Gamewell engineers are always ready to give complete cooperation in the solution of fire alarm problems. This cooperation costs you nothing and may save you money. Ask us.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS, MASSACHUSETTS

FIRE ENGINEERING

MARCH, 1940 VOL. 93 NO. 3

With the Editor

Maybe He Should Be Told! Councilman P. J. O'Donnell, Chairman of the Scranton, Pa., Finance Committee, proposes to discharge all battalion chiefs in the Scranton Fire Department because, as he puts it, "nobody has ever advanced a good reason why we have them."

Reminds us of the boy who cut off the cat's tail, because he couldn't see any use for it, and the cat didn't tell him otherwise.

A little educational work on Councilman O'Donnell seems in order!

The Telephone Fails Again As a useful auxiliary to central station fire alarm service, the telephone will always hold its own. But as the chief reliance for calling the Fire Department in case of fire or other emergency, it is dangerously lacking. A recent instance of its unreliability is the fatal fire at Harrisonburg, Virginia. Here the death of one man by fire and the injury of another can be charged directly to a misunderstanding in receiving the call over the telephone. The Fire Department went to the wrong side of the city.

While the telephone is convenient for calling help in an emergency, it is subject to human error. Under the stress of excitement a person finds it difficult to give information over the 'phone in an accurate, understandable manner.

The only sound solution to the problem of efficient fire alarm transmission is the installation of a modern fire alarm system with plenty of street boxes—even "a box a block" as advocated by one manufacturer.

Firemen Liable in Accidents A fireman at Belleville, N. J., was recently sued for damages incidental to a collision between the fire engine he was driving and a private car. The driver of the car was awarded twelve hundred fifty dollars by the court. Award was made on the grounds that the fireman drove recklessly. His "recklessness" consisted of crossing an intersection against a red light and passing to the left of a standing trolley car. He was not charged with speeding.

This decision illustrates clearly the liability of firemen involved in fire truck collisions. The city cannot be sued, for fire service is a governmental function. Recovery can be made only from the fire truck driver. Of course, negligence or recklessness must be proven.

Enthusiasm in his work must be tempered by care on the part of the fire truck operator.

Fred Sheppard

Modern Fire Alarm System For Cincinnati

Complete Replacement of all Boxes, and a New Central Station Included

By W. F. FRANKLIN

THE story of the new fire alarm installation of the City of Cincinnati, Ohio, could not be accurately told without reference to the events which preceded not only the activities preliminary to this installation, but to the systems which were in operation since the first fire alarm system was installed in 1866. Everything has a beginning. The proven value of these previous services made the several subsequent installations logical decisions on the part of the authorities charged with the responsibility of protection to the lives and property of the citizens.

Cincinnati's first fire alarm system was placed in service on February 7, 1866, when the installation made by J. F. Kenuard & Company of Boston, Massachusetts, was accepted and became the signaling system of the Fire Department. E. G. Megrue, Chief of the Fire Department and first Superintendent of Fire Alarm Telegraph, stated in his report of March 13, 1866: "Less than a month has elapsed but I believe the telegraph has proven fully capable of all for which it was recommended." This system consisted of 103 fire alarm signal boxes operating on four signal circuits. (The new system just completed consists of 983 signal boxes operating on 51 signal circuits.)

Early Fire Alarm Boxes

It is of interest to note the instructions issued for operating the boxes in service in 1866. These are quoted from cards issued at that time: "Directions to Key Holders: Upon positive information of a fire near your signal box, unlock the door and turn the crank slowly and steadily *about twenty-five times;* then *wait a few moments,* and *if you hear no ticking* in the box or alarm on the bells, *turn again as before . . .*" the italics are ours.

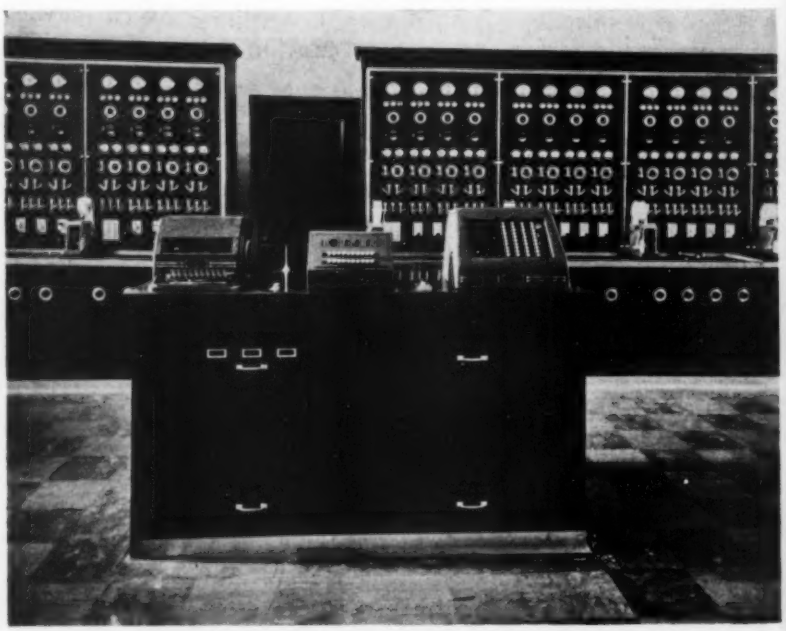
This original fire alarm system was extended and remodeled during the next 40 years and continued at its original central station location at Sixth and Vine Streets under 1908, when a new central office was installed in the present City Hall. Prior to its removal from the original central station, the system had grown to 599 fire alarm signal boxes operating over 24 signal circuits. There were also 30 tower bells and strikers and engine house equipments operating over 8 alarm and 8 joker circuits. The total circuit mileage was about 752 miles, about 10% of which was cabled. The entire installation was valued at approximately $770,000.

Plant Installed in 1908

The installation completed in June, 1908, was contracted for in October, 1906, and required twenty months to complete and for the transfer of all services from the old central station at Sixth and Vine Streets to the City Hall location. The actual cutover of the circuits required approximately three months, or from March 16 to June 8.*

The City undertook a program of improvement in its municipal communications in 1929 and a bond issue for $775,000 was voted by the electors for this purpose. At that time, attempts were made to complete a new installation of fire alarm telegraph with the central station to be at the Eden Park pumping station. These plans were abandoned, however, and nothing was attempted until 1938, when the City Council, at the request of City Manager C. O. Sherrill, passed an ordinance for the issuance of bonds in the amount of $170,000

*Mr. H. J. Pfiester, electrical engineer in charge of the installation, reported that the entire installation had been inspected, tested and approved on June 8, 1908. Mr. Pfiester is the only person still alive in Cincinnati service who was actively identified with the City Hall installation.



Transmitter Pedestal

Left: Teletypewriter Monitor and Sending Keyboard (for general written communications to Fire Engine Houses). Center: Alarm Circuit Control Cabinet (for transmitting Box Alarms over the gong circuits to Fire Engine Houses). Right: Teletype Fire Alarm Automatic Transmitter (for transmitting Box Alarms over the teletype circuits to Fire Engine Houses). Background: Sections of Box Line Boards circuits 1-24, and 25-48.

as the City's share in a P. W. A. participation for the installation of a modern and up-to-date fire alarm system.

City Manager Sherrill then arranged for the services of a consultant on fire alarm systems and two engineer assistants. On the recommendation of the National Board of Fire Underwriters, Col. Sherrill retained the late George E. Morley as consultant; and Frank O. Sanning and Alvin R. Clapp of the Cincinnati and Suburban Bell Telephone Company as engineer assistants. Mr. Morley had long been identified with the fire alarm business, both as a Sales Engineer and special field representative of companies engaged in this field.

New Installation Plans

Mr. Morley started planning the new installation the latter part of October, 1938. By December, the program was well under way. The plan was to divide the project into several sections and to take bids on these under different items. Briefly stated, these were arranged as follows:

Item No. 1—Fire Alarm Boxes.

Item No. 2—Underground and Overhead Circuit Construction.

Item No. 3—Teletype Installation.

Item No. 4—Central Office Equipment.

Item No. 5—Central Office Recorders.

Item No. 6—Engine House Apparatus.

All items were to include the installation work required.

SPRINKLER IN SERVICE 15 WALNUT ST. =-= =-= =-= 1:58 PM

F.H. OUT SERVICE 5125 PADDOCK RD. =-= =-= =-= 9:54 AM

Specimens of Messages Transmitted by Teletype at Cincinnati

By dividing the installation into these sections, it was believed that best results could be secured, as the companies engaged in this industry at the time were not organized to furnish and install all of the equipment specified. Col. Sherrill and Morley agreed on the separation of the different sections of work and bids on the first three items were received on December 20, 1938.

The bids on Item No. 1, Fire Alarm Signal Boxes, resulted in an award on December 23, 1938, to the Gamewell Company of Newton, Massachusetts, for furnishing and installing 815 Fire Alarm Boxes, 10 Spare Boxes, and other miscellaneous repair parts and code wheels.

The specification requirements were such that the Gamewell Company agreed to furnish their Peerless quick succession type Fire Alarm Boxes with standard housings of die cast aluminum alloy. Subsequently, the City arranged for the purchase and installation of 171 additional boxes. All of these boxes are now in service in the city and are rendering satisfactory service.

Each fire alarm box was given a rigid test before being released for installation. These included capacity tests, normal operating and succession features, low current, high current, timing, shunt, interchangeability of parts, and telephone jack requirements.

Each Box Tested

After installation, each box was inspected and tested through the central office and a card record was made of its test and acceptance into service with the time of installation.

All fire alarm boxes in the Cincinnati fire alarm system are of this design. All boxes in service were replaced. Total number replaced—828.

Under Item No. 2, award was made to the Kelso-Wagner Company of Dayton, Ohio. This work involve the furnishing and installing of approximately the following:

Seventy-seven new pedestals—Cincinnati type.

One hundred and forty thousand feet of underground cable.

Companies Cooperate

Forty miles of aerial wire, and necessary terminals, and other construction material. This construction work was carried on in cooperation with the Fire Signal Service Department, the Cincinnati and Suburban Bell Telephone Company, and the Cincinnati Gas and Electric Company, and was completed, including extra duct work and cable installations, on November 5, 1939. The total amount of all work was $61,587.47.

Under Item No. 3, a contract was given to the Graybar Electric Company of Cincinnati, Ohio, for the installation of a teletype system. This consisted of duplicate printer and complete new circuit layout was arranged after an exhaustive study by Asst. Superintendent A. W. Nightingale, who also handled the cut over of all circuits to the new central office

Typical Engine House Installation

Left: Teletypewriter receiver. Center: "Joker" shelf, equipped with punch, register, and tapper bell. Right: Alarm circuit gong, light control relay, and terminal cabinet, inset in wall.

code transmitters at the new central station with associated control panels and receiving machines at each of the engine houses and the office of Fire Chief Barney J. Houston, located at City Hall.

Through the use of this system of teletype message transmitters, all still alarms, all box alarms and special apparatus and equipment calls can be dispatched simultaneously to all engine houses. All messages are typed on a paper tape. The message is printed in duplicate which permits the officer in charge to take one tape as he responds to the call.

New Central Office Planned

Immediately after those contracts had been awarded, Mr. Morley and his assistants began the work of designing the new fire alarm central office and engine house installations. These were completed and bids taken on April 11, 1939. On the following day as Mr. Morley was conferring with Col. Sherrill on the bids he received, he suddenly collapsed and died without regaining consciousness. This was a great shock to all who knew Mr. Morley and of the contribution he was making to the art of fire department signaling service.

Faced with this difficult situation, the City Manager, acting on the advice of the National Board of Fire Underwriters and I. H. Case of FIRE ENGINEERING, contacted the writer, W. F. Franklin, and on April 27, arranged for his services to continue the project as planned by Mr. Morley.

Contracts for New System

After many conferences with the City officials, the P. W. A. authorities, and a careful study of all conditions surrounding the bids, a recommendation for the award of Items Nos. 4, 5, and 6 of the project to the Graybar Electric Company was made to the City Manager. This was approved, and on May 5, 1939, a contract was awarded to the Graybar Company. This contract provided, in general, for the furnishing and installing of:

72—Box Signal Circuit Panels
12—Alarm Circuit Panels
104—Circuit Protector Board
100—Circuit Telephone Test Board
20—4-Circuit Puncturing Registers
1—Special Indicating Board
2—Relay Type Manual Transmitters of the North Electric Co. design together with cabinets and pedestals and all 2400 cells of storage battery, office wiring, and terminal frame.

Recording registers and time stamps for all incoming and outgoing box signals were to be supplied with the transmitter and recording pedestals.

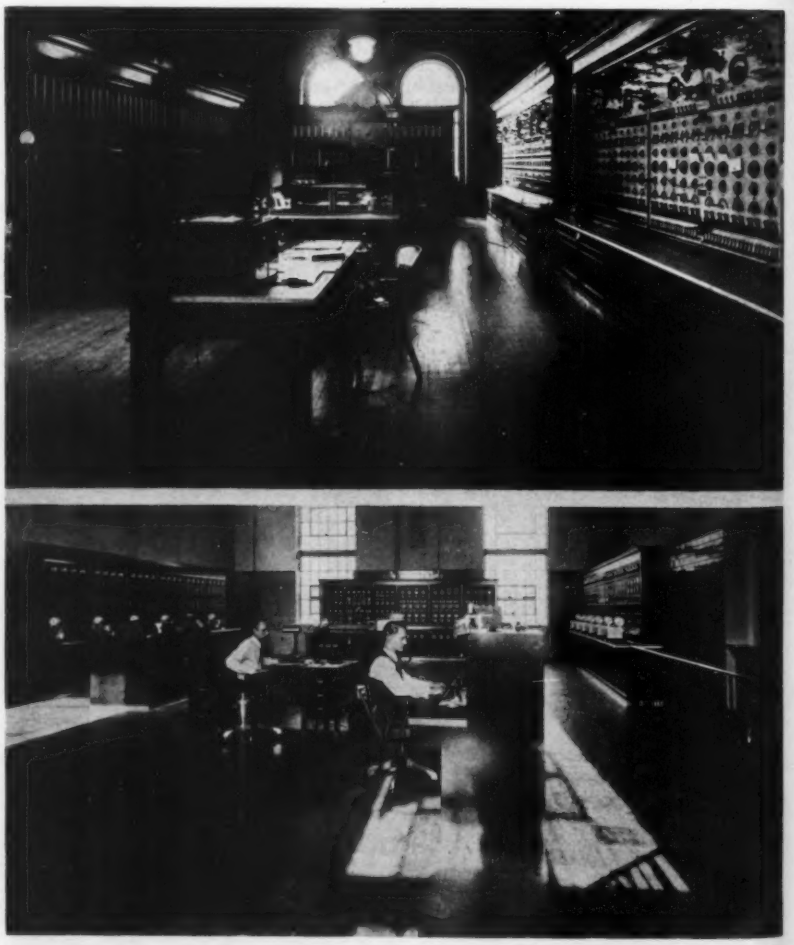
To complete the central station operation, a contract was entered into with the Cincinnati and Suburban Bell Telephone Company for a two position telephone switchboard with capacity for house circuits and trunks for incoming Fire Calls and trunks for departmental calls. In addition, there are direct lines to the Police Department at City Hall.

Under Item No. 7, plans and specifications were prepared by the office of E. C. & G. T. Landberg, architects, of Cincinnati, Ohio, for the necessary alterations to the Eden Park pumping station building. These were completed and bids taken on June 6. Awards were made to the bidders on different sections of the work on June 16. The total cost of these alterations was approximately $37,500, including the plaques designed by Edward Rosendahl which illustrate the progress made in fire fighting and fire alarm signaling during the past 240 years. This work of alteration was completed December 11, 1939, but was so co-ordinated with the central office installation that there was no serious delay in this work.

Erection Work Begun

The active work of erecting the central office cabinets and pedestals was begun on November 8, and by reason of the plans which were laid for co-ordinating all the work involved in completing this installation, the cutover of all service was completed on December 16, 1939. The actual time for transferring all telephone box signal and alarm circuits

(*Continued on page* 136)



Above: General View of the Replaced Fire Alarm Office, City Hall, Cincinnati, Ohio, Which Was in Service From June 8, 1908, to December 16, 1939

Below: A General View of the New Fire Alarm Office in Eden Park, Cincinnati, Ohio

In the foreground are the telephone and special indicating boards. The box line board (circuits 25 to 48) and transmitter pedestal No. 2 are located in the left background. In the right background is another box line board. The teletype and alarm control board are located in the backgrond.

AMBULANCE SERVICE OPERATED BY FIRE DEPARTMENT PROVES VALUABLE

Baltimore, Md., Fire Departments Round Out Eleven Years City Ambulance Service—Good Will Builder for Fire Service

By Otis Smith

THE public municipal ambulance service operated by the Baltimore Fire Department recently filled out eleven years of service. This service, started June 15, 1927, has many times attracted the attention of Fire Departments all over this country. The seven ambulances in active service now make more than 16,000 runs yearly. They are manned by twenty-four firemen, who hold Advanced Course Red Cross certificates.

Back in 1927 it became apparent that Baltimore needed a more efficient ambulance service than the patrol wagon system then in use. The Fire Department was given the job after other plans had been discarded.

One plan would have given the ambulance service to the Police Department. A third plan would have provided each city hospital with an ambulance.

There was a storm of protest at the time, for the prevailing public opinion was that the firemen were not fit for this job. The record of service rendered by the firemen has long since silenced the critics of those early days.

For Emergencies Only

These ambulances are operated for emergencies only, and not as a public convenience. Any person may summon one of these ambulances for an accident, by calling fire central. In cases of sickness, however, the call must come from the police or a doctor. This helps reduce the number of unnecessary runs. It is significant that the private ambulance service run by local funeral directors has increased since the advent of the Fire Department ambulances. Persons of means seemingly do not care to be transported in the fire ambulances, for fear they will be mistaken for a "charity" case.

Attendants of the ambulances are all regular firemen and wear the department uniform. They also work on the regular two shifts. They must review their original training at regular intervals, under supervision of the two department surgeons, Doctors Frank N. Ogden and Oliver S. Lloyd. This keeps them abreast of the latest developments in their field.

Stationed at Fire House

The ambulances are stationed in fire houses throughout the city. Five ambulances are designated as "municipal" and are stationed in five zones. These five take care of accident and sick calls in their respective zones. Another ambulance is reserved for municipal hospital use. The seventh is reserved for firemen only and responds on extra-alarms of fire, under direction of Captain William Brust, of the department infirmary. An eighth ambulance is used to fill in at any station when a regular ambulance is disabled, or is being overhauled.

All ambulances are painted a light red and carry a soft-tone fire bell. None of the municipal ambulances carry sirens or whistles. The department ambulance has an exhaust whistle. It was found that sirens and whistles only excited the patient. All drivers have orders to obey all traffic rules, so that a siren would not be necessary anyway. Speeding is prohibited unless the nature of the call demands quick response.

The regulations state that "Ambulances will not be used in cases of violence; police patrol wagons must be used for that purpose." Intoxicated persons also come under this ruling. This has proven wise, as it keeps the ambulances available for those who really need them. It also prevents damage to ambulance or contents by violent persons.

Ambulance drivers report by telephone to fire central from the hospital, after they have delivered their patient. Long practice has enabled the central men to guess the approximate time that an ambulance will reach the zone hospital, after getting a patient. If they receive a sick call from the vicinity of a hospital, at which an ambulance is soon due to arrive, they will hold the call for a reasonable time. They then give the new call to the driver when he reports in. This method has proven to be quicker than dispatching an ambulance from a distant part of this city. It also reduces the number of times that all the ambulances are out on calls at the same time.

Control Gives Better Service

Control of these ambulances also gives the department better service at fires. The department ambulance rolls on the second and third alarm. All seven of the ambulances may be called through any fire box. The tapping of an assigned signal will bring one, or as many ambulances as desired, to any fire box within the city limits.

Because the attendants are under department discipline, the ambulances are operated in a safe and courteous manner. The attendants are well trained in their work and the citizens are given excellent service.

Chief Engineer Howard Travers has declared the ambulance service to be the greatest builder of public good will that the department has ever had. It is a constant reminder to the citizens of the large part that the firemen play in their daily lives.

Chas. H. Fox Honored

At a testimonial dinner held at the Hotel Gibson, Cincinnati, Ohio, February 21st. Charles H. Fox, board member and former president of the Ahrens-Fox Fire Engine Company, received an award from the National Association of Manufacturers, the Ohio Manufacturers Association and the Industrial Association for achievements on the "frontiers of industry." Mr. Fox, who recently retired from active business affairs, was

Charles H. Fox

designated a pioneer in the field of fire fighting equipment and hydraulics.

A committee of outstanding scientists investigated six months before announcing the honor awards, according to the association's announcement.

Rocky Mount, N. C., Stages Annual Banquet

Over two hundred men and women assembled at the tenth annual Rocky Mount Fire Department Banquet which was a highly successful affair with speeches from the City Manager, and State Fire Marshal, Sherwood Brockwell. Following the banquet, the diners attended a dance at the New Planters Warehouse.

Chief Bryan Dead

Chief Bryan of East Liverpool, Ohio, died recently at the age of seventy-two. He had served forty-eight years in the East Liverpool Fire Department. Many Chiefs from the surrounding area attended his funeral.

Chief M. F. Tyson Dead

Chief Millard F. Tyson, of Lansing, Mich., died recently at the age of 73 years.

He was born in Louisville, Ky., in 1866. He joined the Louisville Fire Department in 1886 and became Chief in 1903. In 1907 he was elected President of the I.A.F.C., presiding over the annual meeting in 1908.

In 1909, Chief Tyson retired from active service, but several years later he accepted an offer from E. I. duPont de Nemours to act as Chief in Hopewell, Va. About four years later he went to the Olds Motor Works in Lansing to act as Chief of the Fire Department in the plant and was still in the employ of this company when he died.

Largest Mine Fire Controlled

Engineers Predict the Fire Will Burn for Another Fifty Years, But Not To Go Beyond the Barriers

By C. A. ROBINSON

ON January 1st, 1940, the Federal government, in conjunction with the Works Progress Administration and the U. S. Bureau of Mines, completed its million dollar project at New Straitsville, Ohio, of bottling up what is known as the "world's greatest mine fire."

The work started on October 1st, 1936, and has been carried on in a three-shift basis, except for a short period of shut-down for finances early this year. The WPA, on advice of the Bureau of Mines, made no effort to extinguish the blaze, but concentrated on confining it to the area in which it already was burning. In all probability it will continue to burn for many years, safely pent up within the barricades.

A Sample of the Mine Fire

This outburst is similar to hundreds of others that have occurred during the past fifty years in the mine area, destroying mine machinery and equipment.

The task of putting the "fire in a cage," so to speak, was considered by engineers the world over as one of the most dangerous fire-fighting jobs in the country, because the workers carried on under the constant menace of rock slides and of asphyxiation by four different types of gases (fire damp, white damp, stink damp and black damp).

Every known safety device and safety practice were employed, all the foremen were experienced mining men with certificates of competency issued by the State Department of Mines, and only men with mining experience were employed underground. Regular meetings of foremen and workers were held to discuss accident hazards, and every man employed on the project was given a full course in first-aid training. In addition to first-aid stations provided underground, the WPA crews were equipped with steel capped safety shoes, safety hats and goggles, while gas masks were stored at convenient locations. Each foreman was provided with an approved frame safety lamp for detecting explosive gas and deficiency in oxygen.

Fans Provide Ventilation

Electrically driven fans five feet in diameter were placed at each end of the tunnels to provide ventilation and dilute any dangerous gases that might seep in. These were necessary because the old mines, during their years of idleness, had filled with black damp, or carbon dioxide, which, while not poisonous, replaced oxygen in the atmosphere to the point of danger. Another deadly gas, carbon monoxide, had resulted from the fire, and extra precautions were necessary to prevent its infiltration into the tunnels.

The largest amount of money spent for material on the project was for timbers used for support in the tunnels. The treacherous nature of the roof encountered in the tunnels made it necessary to use a large amount of timbers, 12 inches or more in diameter, placed upright on each side of the tunnels with crossbars extending under the roofs.

Three barriers, Plumber Hill, Lost Run and Shawnee, consist of both open and cut work, extending through the coal bed from out crop to out crop. Practically all of the tunnel work penetrates old mine workings, necessitating the sealing of all opening into the tunnel. The tunnels are fifteen feet wide at the minimum and extend in height from the fire clay below the coal to sandstone above it. Eight-inch boreholes were drilled along the line of the tunnels at 100-foot intervals to provide a means of introducing non-combustible material, such as dirt and mud, into the clay to form a barrier. The ends and sides were sealed airtight, so when the great blaze catches up with the tunnels, it will burn itself out against the barrier.

Largest Barrier

Plumber Hill Barrier was the first completed and the largest of the three. About one mile west of the village, it is 640 feet long and was completed under most difficult conditions. The old mine workings through which it

Sluice Hole is Used to Get Barrier Materials to the Miners

A. J. Laverty, general foreman, is shown inspecting a sluice hole where purified dirt is shot down to the waiting miners 150 feet below the surface. Care must be exercised to see that these holes are sealed when the barrier is complete.

(See Articles "Fighting a 53 year old Fire," FIRE ENGINEERING, June, 1937, and "Bottling Up a Mine Fire," FIRE ENGINEERING, April, 1939.)

was driven had been abandoned for 40 years or more and had caved in some places to a height of 35 feet. Several families living close to the barrier frequently were driven from their homes by gas and the fire itself. Three families were forced to abandon their homes because the fire had undermined their houses. The other two barriers, Lost Run, about three and one-half miles south of the village, and Shawnee, about four miles east, are each about one mile long.

Many thousands of tons of coal were removed during the excavation of the tunnels. This coal was distributed to relief families in the two counties in which the project was located and relieved the relief burden considerably.

Frequently Visited

Many engineers throughout the United States and Europe have visited New Straitsville in the past three years to inspect the great undertaking. Sightseers by the thousands have flocked there to view the work and see the great flames that leap up from the fire that still rages in the old mine workings inside the barriers. Engineers say the fire inside the barriers may continue to burn for another fifty years, but the barriers will save it from spreading to the Ohio river, 65 miles distant and prevent it from consuming a billion dollars worth of coal, oil and other property that heretofore was in its path.

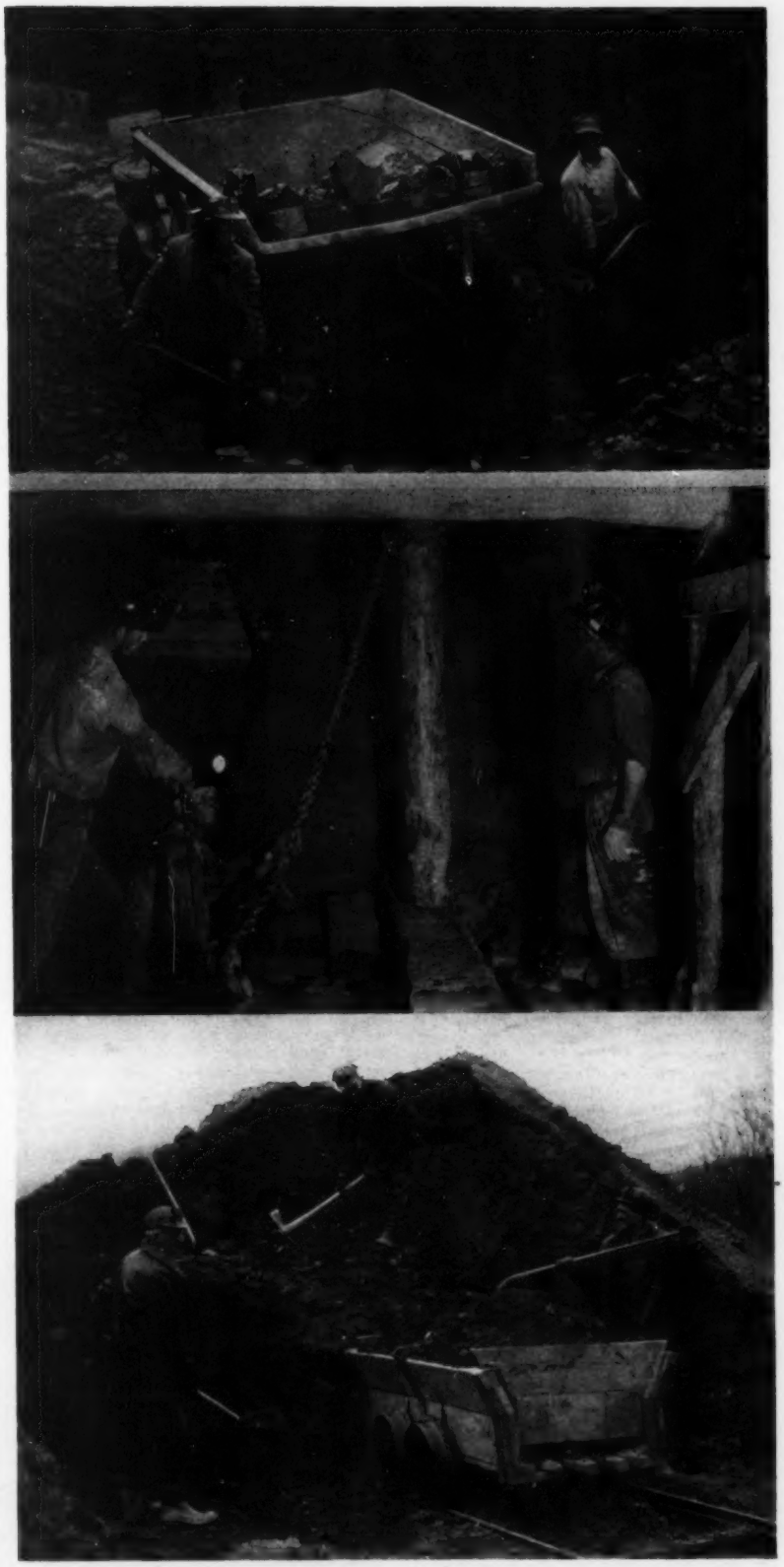
Included among the engineers, and mining experts who have helped supervise the work are, James R. Cavanaugh, of Harrisburg, Pa.; William J. Fene and J. H. Forbes of the U. S. Bureau of Mines, Pittsburgh; G. J. Kane, Columbus; A. J. Laverty, New Straitsville; Clarence Kelly, Nelsonville, and several others.

"There is no question, but what the work has been successful, and that the spread of the fire to the south has been halted" is the statement of Engineers Fene and Forbes of the U. S. Bureau of Mines.

Finest Coal Destroyed

The world's costliest mine fire, said to have been started in 1884 during the great coal strike of that year, has consumed more than $50,000,000 worth of the finest coal in the Great Hocking coal fields. This is one of the richest deposits in the world, having an area of some 24 square miles in the vicinity of New Straitsville and an additional 30 miles of crop line. Besides the destruction of the coal, the surface of

(*Continued on page* 136)



Necessary Steps in Building Barriers

Top: WPA miners are shown loading coal from the ends of the barrier so that the backfill can be put in. Center: Expert miners are pulling timbers at the ends of the completed tunnels so that the backfill can be placed beyond. Lower: This purified dirt which composes the backfill will be sent down to the miners.

CARBON DIOXIDE GAS AND WATER EXTINGUISH STEEL SHAVING FIRE

Difficult Shavings Blaze Controlled Following Thirty-six Hours of Work.

By DAVID E. HATT
Fire Chief, Lorain, Ohio

RECENTLY an interesting situation arose in Lorain, Ohio, involving a steel shavings fire, which was believed to have started spontaneously. Approximately 2,400 tons of this material, which was of fine texture and well oil soaked, was unloaded from a steamer. It was rumored that the borings were warm at the time of the unloading. Eleven days later the borings were burning briskly. The dock employes were informed that the department could do nothing with the fire unless the borings were moved and sprayed as they were dumped. After the elapse of eleven more days I was called down to the dock where I found a large tank of carbon dioxide. Work was started soon thereafter in extinguishing the fire.

The method that was used, in my opinion, could not be improved upon. Carbon dioxide was used at the pile at the time of the lift in order to reduce the terrific heat. The carbon dioxide was used again at the time of the drop. The material was spread out about fifteen inches deep, and was then cooled with water from spray and fog nozzles. This was the only method used, and proved very effective.

Burning Materials Moved

The conditions at hand were ideal for the handling of the fire in this manner. A large "clamshell" was available for moving the material, and the space for repile was satisfactory. A large tractor was used to spread the hot material as it was dumped. Three hose lines were used to cool and flood the material in its new location. A dike was built up at each end by piling the material; this allowed part of the shavings to lay in the water that did not evaporate.

At each lift the carbon dioxide was directed so as to cool not only the shavings, but also the "clamshell" and the cables for lifting it. Water was used practically all of the time on the "clamshell" because the temperatures of the shavings ranged from 300 to possibly 2000 degrees Fahrenheit. At each dump there would be a miniature dust explosion. At times it was necessary to turn the stream upon the carbon dioxide nozzleman as he became enveloped in flaming dust.

Water Could Be Used Alone

My belief is that the water alone would possibly have done the work, provided a condition existed whereby the material could be moved without damage to the lifting device. Otherwise, I know of no other method that would have been as effective as the one used. The heat would expand the cable used for the lifting of the "clamshell" unless cooled by the method we used. In this case, 1,300 feet of 2½-inch hose was laid from a hydrant on a twenty-four-inch main and two fifty-foot lengths were siamesed into one about fifty feet from the hydrant. A "water thief" was attached about 100 feet from the nozzle. A fog nozzle was attached to the end of the main line, and two 1½-inch lines were run from the "water thief."

One of the last piles of material that was tackled was a hot one. We tried water from the nozzle on the 2½-inch line directly into the side of the pile. It was demonstrated beyond the question of a doubt that water alone applied as a fire stream would have no effect on the extinguishment of a fire of this sort. The fire began to crack and sputter, and a blue flame appeared on all sides. The fire burned with much more violence.

Discarding this method, the "clamshell" was used to break down the pile on the sides, after which water was sprayed on the pile. Then the "clamshell" would lift the rehashed material and drop it. After the material was spread, it was thoroughly sprayed with water.

Two days and a night of steady work was required to extinguish the blaze. About 3,000 pounds of the carbon dioxide gas and approximately 700,000 gallons of water were used in this work. It was generally agreed that if it had not been for the carbon dioxide, the fire would have remained burning for a much longer period.

Chief Michael T. Souney Dies

Deputy Chief Michael T. Souney, of the New Britain, Conn., Fire Department, who retired on January 1, 1940, died at his home after forty-two years of service. He was sixty-four years of age.

The late Chief joined the New Britain Fire Department in 1897. In 1906 he was promoted to Captain. He was made Second Deputy Chief in 1923, and then appointed First Deputy Chief in 1935, after a Civil Service Examination in which he had a rating of about 92 percent.

In his career Chief Souney saw many changes, including the program of fire prevention, in which he was in charge for many years. He appeared before numerous groups of school children and clubs to speak on fire department subjects. He held the office of Treasurer of the Connecticut State Firemen's Association for the past seventeen years. Last August when he was confined to his bed by illness, the Association, at its convention in Bridgeport, re-elected him unanimously despite the knowledge that he probably would never be able to attend another session.

Department and Other Reports Received

Eastern Association of Fire Chiefs—Report of the tenth annual convention of the Eastern Association of Fire Chiefs held at Washington, D. C.; eighty-two pages.

Arizona State Firemen's Association—Year book and record of the Arizona State Firemen's Association; 102 pages.

Winchester, Va.—Report of the city of Winchester, Va., for 1935 to 1937 inclusive; thirty-two pages with illustrations.

New York Firemen—Proceedings of the sixty-fifth annual convention of the Firemen's Association of New York, held at Potsdam, August 17 to 20; 527 pages.

Firemen's Association of the State of New York—Officers' reports of the sixty-seventh annual convention of the Firemen's Association of the State of New York held at Flushing, N. Y., August 15-18; 121 pages.

Washington, D. C.—Report of the Fire Survey Board on the consolidation of fire stations in the District of Columbia. Also a supplementary report of the board, issued two weeks later on the same subject.

Pumper Delivered to the Lackawanna, N. Y., Fire Department

This triple combination engine carries a 750-gallon pump. The truck was built by the Buffalo Fire Apparatus Company, Buffalo, N. Y.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

KEEPING MOTOR APPARATUS BATTERIES FULLY CHARGED

ALL of the finely machined and designed engine cylinders of a fire apparatus motor are useless unless a small part of the entire engine assembly functions. The small part is the battery.

Being small, and out of sight, the general thing is to neglect the unit.

However, for efficient operation, the batteries must be properly charged at all times. The charging may be done while the battery is on the motor chassis, or by removing the unit to the charging stand.

The problem in full that is discussed in this issue appears in the box on this page. It is a continuation of a discussion published in the previous issue. In the box on the following page is the question that will be presented in the coming issue for discussion.

Discussion of the Question

Samuel J. Pope, Chief, Boston, Mass.: Rule 146 of our Rules and Regulations provides that "the chauffeur shall see that the storage batteries are regularly inspected and hydrometer readings taken every morning, density to be retained by recharging at or as near 1280 as possible. The entry of the reading has to be entered in the company journal each morning. All wiring, leads and terminals shall be carefully examined and connections at battery covered with vaseline to prevent corrosion. Water shall be added to cells as required to keep the plates covered. Notification is to be made to the company commander of any defects."

Each piece of apparatus and every house is equipped with proper connections for recharging batteries, but the batteries are never removed from the apparatus for this purpose.

We use trickle chargers on our fire alarm circuits which has resulted in a tremendous saving. We use a Westinghouse trickle charger and it has proven very satisfactory.

James Louis McLane, Chief, Charleston, West Va.: Several years ago when I took charge of this department, we were having battery trouble. Often the engines would fail to start. The cost of rentals was expensive, so I immediately bought one Tungar charger for each station. I also bought some hydrometers and had the drivers make daily tests of the battery. If it shows low, the driver attaches the charger. As a result we have eliminated our battery trouble.

In Central Station we use the large type Tungar, capable of charging six batteries at one time.

We have long cords leading to the engine. We attach the clips to the battery. When we get an alarm, the clips are jerked off, the battery lid dropped, and we are ready to go. The chargers have paid for themselves several times over, and we are always sure of having a fully charged battery.

W. C. Beckner, Supt. of Maintenance, Cincinnati, Ohio: Each fire station is wired and has floor outlets for the current from the battery charger. Each apparatus has a polarity receptacle mounted on the dash and connected into the battery circuit. A portable cord with the proper plugs attached to either end is used to connect the floor outlet to the dash receptacle. The ammeter on the apparatus registers the amount of charge.

We use General Electric Tungar chargers. They charge six amperes on a six-volt battery and three amperes on a twelve-volt battery.

These have proven very satisfactory. Failure of the engines to start, or slow starting, is a thing of the past. Each battery is numbered and a record kept of it. We recently replaced a battery that was six years old.

Batteries are not removed for charging, and there is nothing done that will delay the company in responding to an alarm.

William J. Mohr, Chief, Santa Monica, Cal.: The batteries in our department are under the supervision of our alarm superintendent who tests and adds water (if necessary) weekly. If the regular running of apparatus is not sufficient to keep the batteries fully charged, the battery is taken out and taken to a private company whose exclusive business is charging batteries.

We have tried several ways of taking care of our batteries, but finally have come to the conclusion that our present system is best and most reliable. Our experience has taught us that a battery needs expert attention always.

J. F. Healy, Chief, Denver, Col.: We have in the repair shop a Tungar type charger with a capacity of thirty 6-volt batteries. We also have twenty-five or thirty reserve batteries.

When battries need charging, we replace them with those in the reserve supply, bring them back to the shop for servicing.

We have in use six or eight three-ampere chargers in houses where we have an unusually high demand. These are of two types, the Tungar and Dry Rectifier. They have been very satisfactory, and we shall install more as we can spare the money.

Batteries being charged with the small chargers are left in position.

M. J. Dunphy, Chief, Sacramento, Cal.: We are using a heavy duty Hobbs battery in all our apparatus. In each house we have a General Electric Tungar charger. We do not remove batteries from apparatus to charge.

For cars having radios we install, an A. T. R. Manufacturing Company's automatic tapering battery charger (Model 400) with a pull-away plug on rear, and a switch installed on the wall on the driver's side.

M. J. Brun, Chief, Fort Smith, Ark.: At Headquarters where we have seven pieces of apparatus, we use the generator type charger. In outside stations where only one piece of apparatus is located, we use a General Electric Tungar trickle charger. Batteries are charged while on apparatus, and this method has proven very satisfactory.

R. P. Collatt, Chief, Burlington, Ia.: My thought is that one man should have some training under a local battery man. He should then have full charge and be held responsible for all batteries in the Fire Department.

He should inspect them for specific gravity, voltage, and water, on the first and fifteenth of each month and, if they are low, he should see that they are charged and not over-charged. We have found that an inexperienced man is more apt to over-charge a battery and soften the plates.

All of our trucks and cars are equipped with battery sockets on their dash. We use a portable charger and if the battery does not come up within a reasonable time and if it needs more acid, it is then taken out of the truck

HERE IS THE PROBLEM

What methods do you employ for keeping motor apparatus batteries fully charged?

If you use trickle chargers, what type do you employ?

Have you found them satisfactory?

Are batteries removed from apparatus for charging or are they charged in position?

and placed on a stationary charger.

We have fifteen batteries to take care of and have found this system very satisfactory for this size department.

J. E. Parrish, Chief, San Diego, Cal.: This department uses the Rheostat and Tungar type chargers with direct connection to one or more batteries through floor plugs that run from the charger to the plugs by conduits imbedded in the concrete floor or wall. Each apparatus has a socket connected to the battery and a short cord is used between the floor or wall plug and the apparatus socket.

In case of an alarm while charging a battery, the cord is pulled out of the apparatus socket. We find this has been a very satisfactory method of keeping batteries well charged. The batteries are never removed from the apparatus for charging. Each battery is inspected and tested each day by the engineer on duty.

The batteries in the chief officers' cars are charged in the same manner. In general we have had very little battery trouble.

Fred A. Taylor, Chief, Colorado Springs, Col.: Each of our rigs has an attachment plug which is connected to the battery at all times. Each station has a small General Electric Tungar, six-ampere charger, which can be easily plugged in when a battery requires a little charging. If the apparatus has to answer an alarm, the driver simply pulls the attachment plug loose and is ready to go.

We find this method entirely satisfactory as we never allow the batteries to fall very much below full charge and a few hours charging at a time keeps them up. We never take the batteries out of the apparatus while charging.

W. Q. Dowling, Chief, Jacksonville, Fla.: We use trickle chargers (Mercury rectifiers) and find them satisfactory. When the engineers and chauffeurs find the battery a little low, they connect the rectifier. All apparatus, including the Chief's cars are equipped with connections that will disconnect easily. Batteries are charged in position on apparatus.

W. B. Miller, Sr., Chief, Columbus, Ga.: We use trickle chargers and are using the Valley charger at the present time. This has a charging rate of six amperes.

Batteries are not removed from the apparatus.

We have, in our department, several pieces of apparatus on which the starters are sluggish even with a strong six-volt battery. We have recently installed eight-volt batteries on three of these and have noted a big improvement.

George Knol, Chief, Cicero, Ill.: Polarized sockets are set in all battery boxes and connections made to same from the battery. All operators of fire trucks are required to test batteries each morning and to make notation of the reading on forms for that purpose.

We use a Willards charger.

We have found the system employed gives the best service as we have a complete check on the battery from the date of its delivery.

Batteries are charged in position by use of polarized plugs which are so arranged that it is not necessary to pull them off before leaving quarters.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

1. **Have you had any difficulty in starting engines in cold weather?**
2. **If not, what method do you employ for keeping fire apparatus engines warm in cold weather, if apparatus room is not kept warm?**
3. **Has this method proved satisfactory?**

Charles E. Swanson, Chief, Everett, Wash.: We use portable Tungar rectifiers and find them very satisfactory. We have experimented with other types but we all agree that this is the best type for our department. We naturally leave the battery in the unit and have a plug on each piece of equipment to which to connect the charger.

William H. Anderson, Chief, Corpus Christi, Tex.: We use the Burton Rodgers battery charges. We have found them to be very satisfactory. The batteries are charged in position.

W. L. Martin, Master Mechanic, Chattanooga, Tenn.: We have a twelve-battery Tungar set in our repair shops and extra batteries that are sent to various stations as needed.

We have in three stations, three-battery capacity Tungars that recharge batteries in the equipment. These are very satisfactory.

E. C. Daunter, Chief, Jackson, Mich.: Every morning at 8 a. m., each driver checks his battery. He is held responsible for the condition of the batteries in his piece of equipment.

We have General Electric chargers in each engine house and they have proven very satisfactory. Batteries are charged in position.

E. N. Whitaker, Chief, Tacoma, Wash.: We test batteries every day and use a Tungar charger when they need recharging. They have proved very satisfactory.

We had a connection put on the battery box into which we plug the end of the Tungar charger, leaving the batteries always in position.

H. E. Albright, Chief, Bellingham, Wash.: Our trucks are all equipped with polarized plugs. All batteries are charged in position. We use both the trickle charger and motor generator sets.

Our motor generator sets are plugged in on the back end of the truck. When the driver starts out of the station, he pulls the plug which also stops the motor on the generator set.

We expect at least three years from our batteries.

A. H. Bockelman, Chief, Galveston, Tex.: We use the bulb type Westinghouse charger and have found them very satisfactory. Our batteries are charged while in position.

We use a female plug attached to the dash with wires running direct to batteries, using the male end on rectifying line. This plug cannot be put in wrong.

We pay $8.50 for batteries built in Galveston. We get two to three years service and find them very satisfactory. We check them twice a week.

A. Brown, Chief, Birmingham, Ala.: All batteries are charged at the repair shop which has a regular charging department.

Whenever a battery is needed, a mechanic brings one from the shop to the company needing it and puts it in service, taking the old battery back to the shop for recharging.

For a short time we experimented with having chargers at a couple of the stations but this was not satisfactory.

As our repair shop is open twenty-four hours a day, we can get batteries at any time.

C. J. Henry, Chief, Lexington, Ky.: We use two types of battery chargers, the Westinghouse Rectox and General Electric Tungar (bulb type). We have chargers for both six and twelve-volt batteries.

We have a battery charger for each piece of equipment. It is located on a portable metal stand which is placed at the side of equipment when battery is to be charged. This portable stand has a hollow length of pipe running vertical from the stand. This pipe contains a rope with a weight on the bottom end. The top end has a pulley for rope. Rope is attached to wire just behind plug-in connection on wire of battery charger.

We use the Bryant Flush Plug connectors on the dash board of all trucks and the charger has a long electric cord with plug-in connector. All that is necessary to disconnect charger is to pull plug in dashboard, and the weighted cord on the battery stand carries charger cord clear of apparatus.

Batteries on equipment are checked each morning. Water is added when necessary.

Nicholas A. Phelan, Chief, Pittsburgh, Pa.: Each morning and after every run the batteries are tested with a gauge and also with an hydrometer to ascertain the specific gravity of the solution.

In the past we have had trouble with chargers. I called in an electrical engineer and with his aid drew up specifications. The results have been satisfactory.

Batteries are charged while on the apparatus. Wires from the charger are furnished with clips, making it easy to remove from the battery so that in the event of an alarm, no time is lost.

Robert G. Leidig, Chief, Carmel-by-the-Sea, Cal.: The batteries on our four engines are checked with an hydrometer each morning and the specific gravity is kept up to 1250. We use a Lemco five ampere charger. All batteries are charged in position.

Herman Seavers, Chief, Hershey, Pa.: We use a motor and generator for recharging batteries. I built this myself. A one-eighth horsepower motor and a car generator make a very fine charging set. I also mounted a Kingston trickle charger on one of my motor apparatus. It was mounted on the dash inside the hood and wired up to the battery, using a house current of 110 volts. All that has to be done is to attach a wire from the plug in the rear of the truck to the light plug in the wall of the station.

We don't remove any of the appar-

atus batteries until they have been in service for two years. Then they are replaced with new batteries because we feel that the battery has done its duty. Batteries are checked every two weeks for gravity and voltage. They are never allowed to get less than half charged before the charger is put on. This will prevent the battery from getting too hot.

Fred J. Washburn, Chief, Auburn, N. Y.: All our batteries are tested every Monday morning by the department mechanic. In the middle of the week, drivers inspect batteries to see that plates are covered and terminals greased with vaseline. All stations have portable chargers (Tungar type) and when test shows as low as 1200 (some only run to 1250 and have to be charged), the charger is run at a rate of four to five amperes until tests read 1280 to 1300. Batteries are charged in position.

Proper care will prolong the life of the battery for many years.

Thomas F. Cavanaugh, Chief, Waterbury, Conn.: We charge our large 16-18 volt batteries in position with a portable motor generator set. This method is the best, in my opinion. Each driver takes care of his own battery under this method.

The six to eight-volt batteries are removed and a freshly charged battery takes its place. These batteries are taken to the shop for charging. This is done by a wall mounted rectifier. This method incurs quite a little expense and trouble.

James M. Gleason, Automotive Engineer, Chicago, Ill.: In the operation of all of our motor fire apparatus, with the exception of the cars of the chief officers, the individual battery charging automobile generator is eliminated, all battery charging being done with a rectifier with which each fire station is equipped.

The rectifier in use throughout our department, is fastened or secured on the wall of the fire station and is of the vibrating type being a model 2-B manufactured by the Fore Electric Company of St. Louis, Mo., and is capable of charging either a six or twelve-volt battery at a fire to ten-ampere rate.

It is the duty of the officers in charge of the various motor units, to take a hydrometer reading of the individual cells of all storage batteries each morning. They are further required to see that sufficient electrolite is maintained in each battery cell to cover the battery plates, and also to see that the battery terminals are free of corrosion.

When hydrometer readings of batteries show the minimum of 1175, it is required that same be charged, charging to stop when hydrometer readings reach the maximum of 1260.

All daily hydrometer readings, exact time battery is on charge, and the required readings while battery is being charged, is carefully noted and a permanent record of same is entered in the company journal.

Batteries are not removed from the various apparatus for charging as each piece of motor apparatus is equipped with a No. 5552 Hubbell Polarized Flush Receptacle (either on the battery box or dash board). The charging cord from the rectifier has a No. 7058 Hubbell Polarized Cap or plug. This type receptacle and plug can only be connected in one way, there being no possibility of connecting charging cord from rectifier to battery, so that battery would be discharged. Our method of charging batteries has proven very successful.

Daniel P. Collins, Chief, Elmira, N. Y.: Batteries are checked weekly. If water is low, more is added. If gravity is down, the charger is hooked on. In this way we seldom have any failures. We use the trickle charger which is the Tungston type and find it quite satisfactory. All batteries are charged in place. The only time that one is removed from car is when we have repairs to make. The battery is then taken into the shop and the charger applied if necessary.

Robert S. Finnegan, Deputy Chief, St. Louis, Mo.: Batteries are charged in engine houses, and the reserve batteries are charged at the repair shop.

We use the Valley and Handy chargers and various motor and generator chargers.

The Valley and Handy chargers use a silver contact, which costs $1.00 a set, an average of six to eight sets being used per charger each year. The motor and generator charger use about one set of brushes per year at a small cost. The motor charger is the cheapest and most efficient and very satisfactory.

Batteries are left on apparatus while being charged.

William J. Cawker, Chief, Topeka, Kans.: All fire stations are wired with a special charging circuit with polarized jack outlets located at advantageous points in close proximity to the apparatus.

These charging circuits are powered with General Electric Tungar charging units having a capacity for four to six-volt batteries. Batteries are not removed from the apparatus for charging as a polarized jack is mounted on the truck and it is a simple matter to plug in or remove the charging cable at a moment's notice.

In this manner it is possible to keep batteries at a constant charge, which is very desirable now that the apparatus is equipped with such a variety of electrical units such as sirens, warning lights, radio receivers, cab heaters, etc. We find this method of battery charging very satisfactory.

Frank M. Davis, Chief, Danville, Ill.: In the Central Station we use a portable motor charger, and in the other stations we use ten-ampere bulb chargers which have given good service. Batteries are charged in trucks. We have convenient outlets and driver only needs to pull the plug. We find this much better than attaching positive and negative clips to battery posts.

Herman E. Gutheim, Chief, Cambridge, Mass.: Every single company has a Tungar battery charger. Every double company has a wall Tungar battery charger capable of charging two or more batteries at the same time. Headquarters where six pieces are housed has a Tungar charger capable of charging three or more batteries at one time. Trickle chargers are used only on officers lights. We have had no trouble with our Tungar chargers. Batteries are checked twice a week. All batteries are charged on the apparatus.

J. N. Sullivan, Chief, Utica, N. Y.: Batteries are tested each morning and when necessary are immediately charged. Some stations use the tungsten bulb charger and the rest use rectifiers.

We have used trickle chargers of different makes, but found that they did not hold up and were unsatisfactory.

Batteries are charged in position, unless requiring special attention in our shop. We make our own batteries, buying the boxes and plates in quantities and moulding our terminals, posts and straps from old parts, assembling the battery, and charging same at a great saving.

A. McC. Marsh, Chief, Columbia, S. C.: We employ a rectifier for keeping motor apparatus batteries fully charged. We have it installed in a room in the rear of the fire station. There is a main line running from the rectifier through the center of the builidng with service lines branching off same. We can charge as many as four batteries at one time.

Our batteries are inspected daily between the hours of eight and nine o'clock each morning. They are thoroughly checked, and if anything is found wrong, our chief mechanic sees to it that it is corrected. We use the best batteries we can buy for our apparatus. These batteries are heavy duty batteries and are guaranteed for at least two years. All of our batteries are charged in position.

H. J. Reith, Chief, Reeseville, Wis.: We have a small Tungar battery charger with a long cord attached. This charger can be moved to either side of the house where we have electrical outlets for plugging in. On the end of the charger cord we have attached a plug from an old radio horn and in the dash of each of our three trucks we installed the jack of an old radio. All that is necessary is to push the plug into the jack and switch on the current. In case of a call while the battery is being charged, all that is necessary is to pull the plug and throw it out of the way. We have found this system very economical and satisfactory because we never need to remove a battery.

Arthur C. Jaques, Chief, New Brunswick, N. J.: Apparatus batteries are checked twice weekly. Six ampere rectifiers with charging plugs are used when necessary to supplement the heavy duty voltage regulated generators used on the apparatus.

Batteries are charged in place and are removed periodically for inspection and test. No weak battery is permitted to remain in place for charging. It is replaced immediately.

Thomas M. Lane, Chief, Alameda, Calif.: We do not have any trouble in regard to keeping batteries charged as we have extra batteries on hand and insist that batteries are changed monthly whether or not they need recharging.

All of our batteries are specially built with capacities sufficient to stand all the drain from the electric siren and starter and we have no fear of a dead battery.

We do not use trickle chargers for our batteries. All of our batteries are recharged at headquarters station by means of a Tungar charger which allows from the lowest charge to six amperes.

Correspondence

Undermanning of Fire Departments

To the Editor:

I would like to dwell on the current problem of undermanned and underequipped Fire Departments. I have followed all of FIRE ENGINEERING'S recent cent articles on the subject with a great deal of interest. I was particularly interested in the letter from Howard Dillinger of Cincinnati, Ohio, who pictures for us a very depressing picture, which is not uncommon. Our little town, according to the late census, has better than 8,000 population. Our Fire Department consists of four paid men and about eight call firemen. We work the two-platoon system, twenty-four hours on and twenty-four hours off. Our equipment is good, although it is not the latest. We have a 750-gallon La France Combination Hose and Pumper which was purchased in 1928. We have a 500-gallon pump mounted on a V-8 truck, purchased by subscription in 1936. This apparatus is for rural protection. The city agreed to maintain and man this truck for its life, for the added protection it affords. We have had wonderful results with this rig, but it adds a lot to our serious man shortage. With only two men on duty at once, only one can answer a rural call. This leaves one man at the station to man a 750-gallon pumper, which ordinarily requires about five men.

What can we do, but to have a disasterous fire to make the public realize our situation?

We get a lot of good out of FIRE ENGINEERING. Our little company wishes you lots of luck for the year 1940.

J. W. GREENOUGH
Longmont, Colo.

Steel Wool Fires

To the Editor:

Within a ten-day period, I was called four or five times concerning the burning and extinction of steel wool dust arresters.

It seems that some enterprising salesmen have been selling a lot of dust arresters around the vicinity of New Brighton, Pa., for use in hot air conductors of furnaces. These arresters are made of stout wire frame between which is fastened a pad of steel wool. The frame is bent to fit the inside of the warm air pipes of the furnace, and the steel wool is drawn in such a manner that it forms a screen covering the entire inside diameter of the pipe. Through this pad of steel wool passes the air current from which the steel wool removes a large percentage of lint, dust, and the like. Soon the pad is saturated with this very dry powdery substance which, under the proper conditions, ignites and burns with a very intense heat. The heat is sufficient to ignite the steel wool, causing molten steel globules from the burning steel wool to run down the pipe. This heats the conductor pipe until finally it causes a partition or between-the-floor fire. Several chiefs have tried carbon dioxide in the conductor, but it failed to extinguish the fire, probably because of the intense heat and the molten particles. Carbon tetrachloride intensifies the fire and releases chlorine gas. If the steel is still burning upon the arrival of the firemen, the best agent to use is powdered pumice or sand. Usually the steel wool has been consumed by the time the fire is discovered and has ignited the floor or partition, in which case it is an ordinary class "A" fire.

F. K. KENNEDY, JR.
New Brighton, Pa.

Permanent Suction Pipe

To the Editor:

I am writing you in regards to a device I have never seen advertised or used, but which seems to me would find a field in connection with rural fire protection. This is some sort of suction pipe to be placed in a lake, pond, or large brook in the fall and which will not freeze up when the water surface freezes. As Captain of the local Fire Company, I am trying to improve the fire service by improving the equipment and facilities at a minimum of expense to the town.

Our hydrants do not extend to outlying sections, where there are located some fine buildings, dwellings, and farms. Close at hand to these localities are some usable sources of water. However, all these sources are unavailable in the winter, because a building would burn down before we could chop a hole through twelve to fourteen inches of ice to get water. Do you know of any device that is for sale commercially or that we could make up for a reasonable sum, which would enable us to draft water instantly, if necessary?

I had in mind some sort of a dummy hydrant, but the water must be kept out of it by a foot valve to prevent freezing. A four-inch pipe should give ample water for our 500-gallon pumper to draft through. Air pressure might be kept in the pipe to keep the water out, but a special cap would be necessary instead of a foot valve.

F. W. PUTNAM, JR.,
Engine Co. No. 2,
Acton, Mass.

Telephoned Alarm Results in Fatality

Recently a tragic incident occurred which illustrates the unreliability of telephone alarms, particularly in transmitting the location of a fire or other details relative thereto. It proves that in an emergency, use of the telephone is subject to error.

An eighty-two-year-old man was burned to death and another man seriously injured at a fire recently at Harrisonburg, Va. This marks Harrisonburg's first fatal fire in nearly two decades.

Removing the Body After the Fire at Harrisonburg, Va.

The fire occurred in a frame structure and would probably have been extinguished with little loss had the Fire Department secured the correct address. The death of the victim can be laid directly to a misunderstanding in receiving the call over the telephone. The fire company answering the call went to the opposite side of the city. Had it not been for this misdirection, the company would have arrived in time to prevent the loss of life.

Junior Fire-Fighters at Fort Collins, Col., Hold a Fire Net Drill

Method of Carrying Hose, and Detail of How the Hose is Folded

Carrying Lead-In Hose

Chief J. D. Miller, of Davis, Cal., has worked out a new method for carrying lead-in hose.

On each side of the divided hose body, and on the outside of the body at a point near the rear platform, are carried bundles of hose made up in folds. These bundles are held by two heavy webbing straps with quick action buckles, suspended from a spreader, which in turn is hooked on a latch that can be released from the rear platform or the driver's seat.

A bundle is made up of two 100-foot lines of 1½-inch hose, and nozzles complete with shut-off wye, and attached to the end of a 2½-inch line on one side of the apparatus body.

Another bundle is made up of 100 feet of 2½-inch hose with nozzle attached and continuous with the load on the other side of the hose body.

Upon arriving at a fire, one or both of these bundles are dropped directly in front of the building involved. The weight of these bundles, which is from 175 to 200 pounds, is sufficient to pull off the line from the body, as the engine proceeds to the hydrant. While the lines are being hooked up, the nozzle men have ample time to loosen the bundles and lead in with dry lines.

One hundred feet of lead-in is usually sufficient, Chief Miller said, to reach a fire and there is not the difficulty which usually follows, when not enough lead-in hose is taken off. No time is lost in attaching nozzles or wyes.

It is believed that this plan would be very effective for volunteer departments, where there may be a shortage of volunteers.

An Acid and Soda Pumper of Former Years

An old type of acid and soda pumper has been located at Oswego, N. Y., by James R. Jackson. The apparatus was built in 1869 by the Kingsford Foundry and Machinery Company, then a part of the Kingsford Starch Factory. A grandson of the original builder is still carrying on the machinery company, building entrifugal pumps for industrial use, and he has the old fire relic.

The outfit has two tanks, an acid container box and a soda box on opposite sides of the cart. The pump is on the bottom of the tanks and is connected to the tanks with brass piper. At the base of each tank is a shut-off value.

On a run, both tanks held water. At the fire, acid was dumped in one tank and soda in the other, valves opened, hose unreeled and the pump started. The pump developed a pressure of 120 pounds during a test in 1938.

The apparatus was hand drawn and it carried the standard equipment of two buckets, several lanterns, two axes, and 50 feet of hose. This type was a forerunner of the old chemical apparatus of the horsedrawn days.

Hand Drawn Chemical Pumper Made in 1869

Meeting Held of Fire Chiefs' Emergency Plan

Bernard Scully, special agent for the National Board of Fire Underwriters, and ex-president of the Fairfield County Fire Chiefs' Emergency Plan, was the speaker at a meeting of the Plan held in the new Nichols, Conn., firehouse.

His topic was "The Crime of Arson" and as usual was interesting from start to finish. Mr. Scully said that there are now forty-three states with uniform arson laws, a condition that did not exist a few years ago. He criticized some fire departments as not being on their toes in detecting signs of arson at fires, and not noting conditions of rooms, if no one is home, the clothes closets, and noting whether the usual amount of clothing is stored, or seeing that the furniture is properly arranged. He cited an instance where a house was set afire twice in one night, because the fire department did a good job the first time in extinguishing the blaze, but didn't do a good job in noting evidence of arson, with the result that the owner came back and set the house on fire again later that night. He discussed pyromaniacs and the different classes of same. Mr. Scully also went into detail on other fires which his organization was called in on to track down the guilty party, and cited the various scientific methods now being used to check evidence, relating that only in one instance has he known of someone actually seeing the fire set, but that by tracing wire cutters, purchase of inflammable materials, etc. guilty parties are brought to trial and a chain of evidence submitted in court that is fool-proof and usually sends the culprits to jail.

Other speakers, who responded briefly were First Selectman William G. Davis of the Town of Trumbull; Fred Carstensen of Nichols, chairman of the Board of Fire Commissioners, Chief Sydney Stapely of Nichols and William F. Schepp, member of the Board of Fire Commissioners.

Chief C. J. Carrigan, president of the State Firemen's Association, discussed the drivers liability bill and said that a letter was being sent out to all the fire departments regarding the bill, to find out what companies were not covered by its provisions, and asked for suggestions in making the Bill more complete.

Also present were Commissioner George Brencher, vice president from Fairfield County in the Firemen's Association, Captain Philip Thompson, member of the State Firemen's Associations legislative committee from Fairfield County and Captain John Clancy, last year's vice-president from Fairfield County to the State Firemen's Association and a candidate for State Vice-President at the August convention.

JOHN MOEHRING

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Solving for N.P. and Discharge

To the Editor:

In the following layout, what is the nozzle pressure? What is the discharge? 100 feet of 2½-inch hose, 100 feet of 1½-inch hose, 150 feet of ¾-inch chemical hose and ⅜-inch nozzle. Hydrant pressure is 85 pounds. M. J. K.

Answer: Change to a single line of 2½-inch hose. The factor for changing 1½-inch to 2½-inch is 0.074. The factor for changing ¾-inch to 2½-inch is 0.0029.

100 feet of 1½-inch is equal to 100 ÷ 0.074 = 1,351 feet of 2½-inch.

150 feet of ¾-inch is equal to 150 ÷ .0029 = 51,724 feet of 2½-inch.

Total of 2½-inch hose in the line is equal to 100 + 1,351 + 51,724, or 53,175 feet.

N.P. = E.P. ÷ (1.1 + KL).

E.P. (hydrant pressure) is equal to 85 pounds.

K for 2½-inch hose and ⅜-inch nozzle equal ⅜ × ⅜ × ⅜ × ⅜ ÷ 10.

= .375 × .375 × .375 × .375 ÷ 10.

= 0.0197753960625 ÷ 10.

= 0.00197753960625, or 0.00198.

L is equal to 53175 ÷ 50, or 1063.5.

Then N.P. = 85 ÷ (1.1 + .00198 × 1063.5).

= 85 ÷ (1.1 + 2.10573).

= 85 ÷ 3.2 (approx.).

= 26.56.

Discharge (g.p.m.) is equal to $29.7 \times d \times d \times \sqrt{p}$.

d (nozzle diameter in inches) is .375.

p (nozzle pressure in pounds per square inch) is 26.56.

Dis. = $29.7 \times .375 \times .375 \times \sqrt{26.56}$.

= 29.7 × .140625 × 5.1536.

= 21.5 g.p.m. approximately.

Discharge at Different Pressures

To the Editor:

What is meant by the statement "a rotary engine gives its rated capacity at 120 pounds, 50% at 200, and 33⅓% at 250?" How is it that you can, under the same layout, increase your discharge per minute by increasing the pump pressures when as above, the capacity is reduced.

N. A.

Answer: The capacity of a pump is determined by the power of the motor. A pumping engine which can deliver its rated capacity, for example, 750 gallons per minute at 120 pounds pressure, cannot discharge the same quantity of water at higher pressures. If we increase the pressure, less water is discharged by the pump, for we cannot expect more from the pumping engine than the power of the motor can provide.

It is assumed, in this discussion, that the power of the motor is only sufficient to give a 750-gallon discharge at 120 pounds pump pressure.

Theoretically, a pump should give one-half of its capacity at twice its rated pressure, or 375 gallons per minute at 240 pounds pressure. Actually its performance is less than this amount, due to the additional friction in the pump gearing and also due to greater slippage at higher pressures.

If, however, a 750-gallon pump is delivering but 300 gallons per minute at 120 pounds, for example, through a given layout of hose and nozzle, the discharge can be increased by increasing the pump pressure. However, we must always remain within the power output of which the engine is capable. Most fire engines are provided with gear arrangements (in centrifugal pumps, stage arrangements) so that they can operate either at capacity or at pressure. By "capacity" we mean a greater flow than at "pressure," which latter indicates a higher pressure than at which we operate pump to get capacity. Referring again to the above engine, this engine has a rated capacity of 750 gallons per minute at 120 pounds pump pressure. If a hose layout is provided such that the nozzle will be discharging 750 gallons per minute when the engine is operating at 120 pounds pump pressure, the maximum power of the motor will be employed. If, however, the length of line is increased materially, then higher pressure at the pump will be needed, and the capacity will have to be reduced. In this latter situation the pump might be operated at "pressure," rather than at "capacity."

"K" for ⅞-inch Nozzle

To the Editor:

What is the value of "K" for ⅞-inch nozzle, using 2½-inch hose?

L. F. B.

Answer: "K" for ⅞-inch nozzle on 2½-inch hose is found by multiplying the nozzle diameter by itself three times and dividing the product so secured by 10.

⅞ × ⅞ × ⅞ × ⅞ = .875 × .875 × .875 × .875.

= .586181640625.

= .586181640625÷10=0.0586181640625, or 0.05862, or 0.059 approx.

Relay Layout

To the Editor:

No. 1 pump at hydrant with 45 pounds pressure at hydrant is pumping to No. 2 pump through 1,000 feet of 2½-inch hose. No. 1 pump pressure is 300 pounds. What is the friction loss and what pressure would No. 2 pump received from No. 1 pump? Both pumps have a capacity of 1,000 gallons. A. J. R.

Answer: Unless the nozzle pressure and nozzle diameter are known, as well as the length and diameter of hose line from the second pumper to the nozzle, the friction loss between the first and second pumpers cannot be determined.

This friction loss is dependent solely upon the amount of water flowing through the lines. This in turn, is determined by the nozzle pressure, nozzle diameter, length and diameter of lead line.

Where this information is given, the first step is to solve for nozzle discharge. Knowing this discharge, the friction loss in the line is then calculated; and by adding the friction loss in the lead line to the pressure at the nozzle, you get the pressure at the discharge from the second pumper.

Further, by utilizing the flow from the nozzle and the proper formula, the friction loss in the line between the first and second pumper is readily found. By subtracting this friction loss from the engine pressure at the first engine, you can secure the delivered pressure from the first line to the second pumper.

Discharges at Different Pressures

To the Editor:

Specifications for new fire engines require that they shall deliver 1,000 gallons at 160 pounds, 500 gallons at 320 pounds, 400 gallons at 400 pounds and 250 gallons at 600 pounds.

Pounds and gallons are inversely proportional at the three lower pressures mentioned. Why is this not true at 600 pounds? L. H.

Answer: The specifications for discharge at various pressures are based on the quantities of water which can be reasonably expected of a pumper at the various pressures. At high pressures, slippage, that is, the leakage of water from the discharge to the intake side increases. As the discharge from the pump at high pressures is less than at low pressures, the slippage represents a very important factor at higher pressures. The higher the pressure, the greater the per cent slippage.

With centrifugal pumps, as the pressure is increased to unreasonably high figures, the slippage becomes so great that, above critical pressure, no water whatsoever will be discharged by the pump.

Sprinkler Head Pressures

To the Editor:

"Simplified Fire Department Hydraulics" states that "discharge from a sprinkler head is equal to ½ p plus 15, where 'p' is the pressure on the head in pounds per square inch." How would the pressure be obtained

at the head, other than by a gauge? City pressure, friction loss and elevation would all have to be considered.

How much pressure can be put on a head, if a pump is used? When a pressure of 15 pounds is mentioned, I take it for granted that this would be on the floor where the heads are open. W. M.

Answer: The only way to determine accurately the pressure at any sprinkler head is by use of a gauge.

Ordinarily, sprinkler head pressures should be 25 pounds or more, but they are rarely above 50 pounds pressure.

Incidentally, sprinkler heads are tested to 300 pounds pressure, so that any pressure within the range of the average water department will do no serious damage to the head.

Naturally, pressure at heads on different floors will vary, depending upon the elevation of the head above the water main or pump. The highest heads will have the lowest pressures while lowest heads will, naturally, have the highest pressures.

Flames Reduce Apartment House

Quick thinking on the part of the superintendent was largely responsible for the safe evacuation of 200 tenants from the four-story Custer Arms apartment house in Yonkers, N. Y., after the discovery of a fire. The fire was first discovered about 8:45 by the superintendent. With the aid of two policemen, he ordered the tenants to leave the buildings. Three alarms were turned in, followed by a general alarm. All available Yonkers apparatus responded to the general alarm. It required the combined efforts of about twenty pieces of apparatus, which responded from Yonkers, Bronxville, and Eastchester to a general alarm, to control the fire.

The appartment house was erected in four attached units around a rectangular courtyard. The architecture was of the English gable type, with the two lower floors of brick, and the two upper floors of wood and stucco construction, surmounted by a slate roof. Fanned by a strong west wind, the flames swept through the four units, and the roof caved in. The damage to the building and the personal effects of the tenants was estimated at approximately $250,000.

Firemen Stand By at $50,000 Fire

Fourteen dismissed Woburn, Mass., call firemen stood idle and watched a $50,000 fire sweep through a fourteen story abandoned tannery and also destroy or damage some fifteen other buildings.

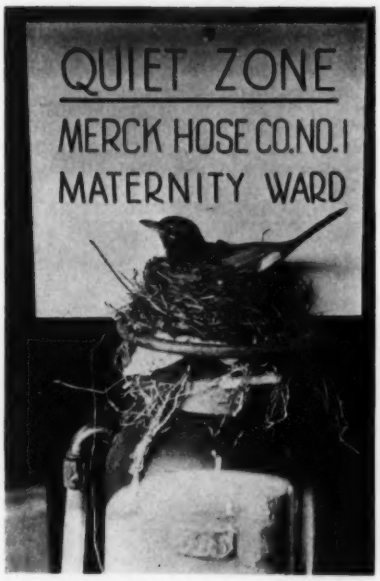
They refused to assist in fighting the fire that threatened the entire Woburn Highland section, because they were told that such action might interfere in their legal battle against Mayor W. E. Kane. These firemen had been dismissed many months ago by Mayor Kane who advocates college students as a volunteer force supplementary to the nucleus of permanent men. Spokesmen for the call firemen have warned them against assisting in fighting fires and have forbidden them to ride the truck.

Fire Chief M. J. Kane, the Mayor's brother, summoned aid from the neighboring towns of Medford, Winchester, Stoneham, and Reading. While help was on the way, men, boys and even women helped in coupling hose lines.

The fire started in the abandoned tannery building when a spark from a torch, which was being used in the dismantling of machinery, dropped on some oil and grease. Before the workers could extinguish the blaze, it had spread rapidly due largely to the absence of windows which had been removed when the plant was abandoned. Work of the firemen was made hazardous by dangling live wires from burned light poles.

This Blaze Left Sixty-seven Families Homeless

View of the blaze in the Custer Arms apartment house in Yonkers, N. Y., for which four alarms were turned in. Outside help was requested from the neighboring villages of Bronxville and Eastchester.



Extinguisher Becomes Maternity Ward

A robin ignored the traditional building architecture and made a nest in the plant of Merck & Co., manufacturing chemists, at Rahway, N. J. The nest was on an extinguisher, within three feet of a busy flow of traffic. When discovered, a "Quiet Zone" sign was placed near the nest, and to prevent any interruption, another extinguisher was placed nearby for possible fire use. A brood of three robins were hatched in this nest.

Tank Car Fire Extinguished in Novel Manner

The Members of the Volunteer Fire Department of Conway, Ark., had a battle on their hands when they answered a call at the Lion Oil Refining Company in the Railroad yards in south Conway. The plant was located outside the city limits and thousands of feet from the nearest city fire plugs. Upon the arrival of two fire trucks, a 600-gallon American La France pumper and a Ford V-8 truck with a booster pump, the oil pumping station was a mass of flames. A railroad tank car was connected by hose to the pump which was filling the storage tanks of the bulk plant. Fire Chief K. W. Parker used all available means at hand to control the fire which continued to gain in fury from the gasoline flowing from the tank car. Chief Parker was urged to abandon the fire and withdraw the firemen. However, Parker was determined to complete the job. Under the protection of a small hose line, a fireman directed a hose line into the tank car out of which gasoline was still flowing and feeding the fire. In a very short time the water settling to the bottom of the tank replaced the flow, and the fire was quickly brought under control.

Annual Report of Rochester

The Bureau of Fire of the Department of Public Safety, Rochester, N. Y., recently submitted the annual report containing a detailed record of the operations of the Fire Bureau, for the year ending December 31, 1939. The report was divided into two sections, the first section dealing with the general activities of the Fire Bureau; the second section deals with the activities of the Fire Prevention Division of the Fire Bureau.

New Station Opened

Erected at a cost of approximately $61,000 the new No. 5 Fire Station at Hartford, Conn., was recently opened with appropriate ceremonies. The new station, built on the site of a former fire house, contains an apparatus room, a watch room in which is placed all fire alarm equipment, telephone and signal system, toilet room, and a recreation room on the first floor. The walls of the apparatus room have a glazed brick finish, and the floors are of hardened cement. Three sliding poles connect the dormitories on the second floor with the apparatus room. The second floor contains dormitory with overhead lighting and ventilation, a locker room, a toilet and shower room, three large rooms for the company officers with toilet and shower room, and a linen storage room. The basement contains a hose rack to hold eighty lengths of hose, laying horizontally, a work bench, an oil storage room, a boiler room, a kitchen and a hose tower with hanging space for forty lengths of hose.

The building is modernistic in design. All important lighting equipment is arranged to trip when an alarm comes into the station. A bronze tablet is located on the apparatus floor indicating that the building was erected as a PWA project and lists the names of the Mayor, the Fire Commissioners, the Fire Chief, and others.

THOMAS MAGNER.

View of the Station Showing Some of the Design Characteristics

Murphysboro Issues Report

A report has been sent to the Department of Insurance of the State of Illinois for a complete report of the work as carried on by the Murphysboro, Ill., Fire Department for the year ending December 31, 1939.

Out of eleven calls for first aid, only one life was lost. Ninety per cent of the fires in Murphysboro were handled with booster lines, and other small appliances which are carried on a triple combination pumper. Out of a fire loss of $849, $580 occurred at one fire.

The Department responded to 150 alarms in the city of Murphysboro, and twenty-one alarms outside the city. A majority of those alarms were received between six a. m. and six p. m.

Charity work was not neglected. A great deal of clothing, bedding, beds, stoves, etc., were gathered up and distributed to the deserving people who were badly in need of them. At the annual Christmas Party more than 800 children were given toys, candies, fruit, and nuts. Charity work was made possible with the co-operation of the citizens of Murphysboro.

During Fire Prevention Week, many essays and inspection blanks were received from the schools. These were all mailed to the National Board of Underwriters.

$500,000 Hotel Fire, But No Loss of Life

Swift rescue work on the part of the Fire and Police Departments of Burlington, Vt., averted tragedy in a $500,000 hotel fire which was the most disastrous fire in the history of Burlington The fire apparently started in a third floor room at the rear of the hotel. When the firemen arrived at the scene of the fire shortly after two a.m., their first object was to evacuate the building of about 150 guests. Ladders were thrown up against the building to windows where persons were seen. It was necessary for the firemen to enter the building to arouse some persons who had not been awakened by the din. Fire fighting efforts of the firemen were crippled by the intense cold and a stiff wind. About nineteen lines were turned on the blaze, which is a record in Burlington. At one time it appeared as though the fire fighters had the fire under control; however, a shift of wind and a series of explosions spurred the flames on. Burning embers were thrown high in the air, endangering many of the nearby buildings. It was not until twelve noon that the blaze was brought under complete control.

Fire Demonstration in Toledo

During Fire Prevention Week, the fire department of Toledo, Ohio, provided a mock battle of flames in the drill tower at No. 23 Engine house. A smudge fire in the tower added realism to the action. Types of hose connections and attachments, ladder drills, including the use of the scaling ladders, and various rescue methods were shown.

The principal attraction was the new sixty-five foot aerial ladder. This new piece of apparatus was used to demonstrate the ease with which it could aid in the rescue of injured or helpless persons from burning buildings.

New Aerial Ladder of Toledo, Ohio, in a Rescue Demonstration

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Miscellaneous Questions

The following are answers to questions appearing in the February issue of FIRE ENGINEERING

1. They may crack, or rupture.
2. Yes, excellent ones.
3. Yes, by radiation through and from the heated window panes.
4. They may burst.
5. Rapidly heating them.
6. To delay failure in the event of fire by protecting the columns and girders against rapid temperature rise.
7. Weakening of structure by fire and not lessening the lead thereon.
8. Saving life.
9. By "size-up" is meant the making of a quick survey of the situation relative to the fire, as encountered by the department upon its arrival.
10. Locating the fire.
11. Wooden interior construction and combustible floor supports.
12. Yes.
13. Because of the presence of woodwork and many concealed spaces created in the conversion of the building.
14. It should be considered in the size-up.
15. Vertical shafts, pierced walls or other unprotected openings through which fire may extend.
16. Yes.
17. Where embers and heat of lumber yard fire are being blown by the wind toward the frame building.
18. Summer. In Winter, buildings may be covered with snow, while in Summer they may be tinder-dry from the Summer sun.
19. Large streams.
20. Yes. They have been proven effective by years of use.
21. Nozzle diameter, 1-inch.
    Discharge is 200 gallons per minute.
    Formula: Discharge $= 30 \times d \times d \times \sqrt{p}$.
    Where "d" is nozzle diameter, and "p," nozzle pressure.
    Put the values we know in the formula: then; $200 = 30 \times 1 \times 1 \times \sqrt{p}$.
    Simplifying, $6.667 = \sqrt{p}$ and $p = 6.667 \times 6.667 = 44.44$ pounds. *Answer.*
22. Use the discharge formula:
    Discharge $= 30 \times d \times d \times \sqrt{p}$.
    "d" (nozzle diameter) is 1½-inch.
    "p" (nozzle pressure) is 60 pounds.
    Then Discharge $= 30 \times 1\frac{1}{2} \times 1\frac{1}{2} \times \sqrt{60}$.
    $= 30 \times 1.5 \times 1.5 \times 7.75$.
    $= 5.23$ gallons per minute. *Answer.*
23. Use the discharge formula:
    Discharge $= 30 \times d \times d \times \sqrt{p}$.
    "d" (nozzle diameter) is 2 inches.
    "p" (nozzle pressure) is 90 pounds.
    Then Discharge $= 30 \times 2 \times 2 \times \sqrt{90}$.
    $= 30 \times 2 \times 2 \times 9.48$.
    $= 1137.6$ gallons per minute. *Answer.*
24. The rule for finding "K" for any size nozzle on 2½-inch hose is:
    $K = d \times d \times d \div 10$.
    Where "d" is nozzle diameter.
    $K = 1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2} \div 10$.
    $= 0.506$. *Answer.*
25. N.P. $=$ E.P. $\div (1.1 + K L)$.
    Where N.P. is nozzle pressure.
    E.P. is engine pressure.
    "K" is factor, and is 0.105 (1" nozzle, 2½" hose).
    "L" is number of 50-foot lengths in line and is 10.
    N.P. $= 120 \div (1.1 + 0.105 \times 10)$.
    $= 120 \div 2.15 = 55.7$ pounds, approximately. *Answer.*
26. Cooper hose jacket.
27. When using the jacket, so place the tear that the water will be shooting out away from the operator and as nearly horizontal as possible. This will prevent the jacket from being knocked back when closing, such as would be the case were the tear at the top.
28. Hoisting hose and getting it over rough or sharp edges.
29. New York hose roller.
30. The hose strap is a strap with hook and handle and is used for carrying hose lines up ladders, securing lines, etc.
31. Scaling, roof ladder, solid side ladder and trussed ladder.
32. Trussed ladder.
33. The lower section of an extension ladder.
34. The upper section of an extension ladder.
35. The butt is the bottom, or ground end, of a ladder.
36. Poles used to raise, steady or guide long ladders.
37. Assuming an extension ladder is referred to, the base should be placed 10 feet from the building.
38. Approximately 4½ feet.
39. Two men.
40. Between fifth and sixth rungs.
41. The truss side (some designs of ladders require the trussed side to be placed away from building).
42. As a battering ram for forcing doors.
43. From 4 to 6 pounds per foot.
44. About 24 pounds.
45. Men stand erect, left feet well advanced, net at level of neck; hold with both hands, palms up. Keep eyes on person jumping so that net can be quickly shifted, if necessary, to catch a person jumping.

Mascot Gets Fitting Funeral

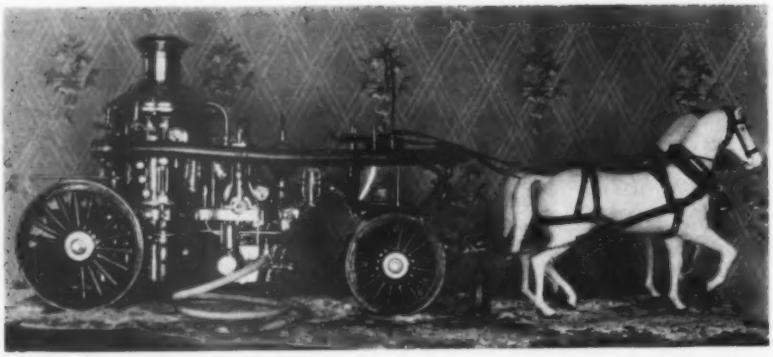
"Tippy," the Mascot of the Franklin Fire Company of Chester, Pa., died recently in line of duty. The bulldog attempted to mount the pumper as it was leaving the house in answer to an alarm, missed the running board, and fell under the machine, receiving injuries which later caused his death. After an elaborate funeral, in which more than 5,000 persons had passed by the bier, the body was placed in the S. P. C. A. cemetery nearby.

Correction

On page twenty-four of the January issue of FIRE ENGINEERING, in the first sentence of the correspondence titled "Dangers of Carbon Monoxide," the phrase "Carbon Dioxide in its deadliest form" should read "Carbon Monoxide in its deadliest form."

Omaha, Neb., Fire Department Drill Team

Omaha, Nebraska, is proud of her Fire Department Drill Team, which is called upon to perform at many public functions. It has proven a fine advertisement for the Omaha Fire Department, of which Arthur W. Olsen is Chief.



Model of an Old Ahrens-Fox Pumper

Model Made of Old Steamer

Working with a scale of two inches to the foot, two men constructed a working model of an old Ahrens-Fox pumper.

Work on the engine was started in 1930 and was completed last year. The model weighs 70 pounds and is 29 inches long, 17 inches high and 11 inches wide.

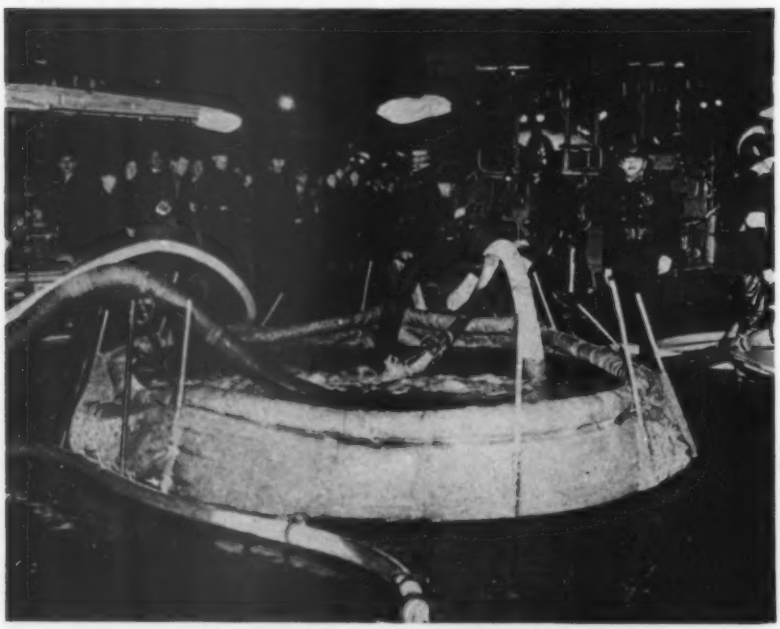
The makers, Carl Doll and Fred Batsche, constructed every part with the exception of the pressure gauges, water glass, and horses. The boiler was tested at 150 pounds pressure.

Signal Block Control

Each end of the city of Antioch, Cal., has railroads—Southern Pacific Railroad and the Santa Fe Railroad.

In the event of a fire in the train sheds, the department would be required to stop all trains or at least have them controlled. The Antioch Fire Department depends upon a wire which is easily clamped to the rails. This appliance has the advantage that it will stay put in the control of block signals.

Wire Shown in Position for Controlling Track Signals



Air Raid Tank Proves its Worth at London Fire

Originally designed for emergency use during air raids, a large canvas tank was hauled out by the fire department of London, England, during the recent fire in the Gamaphone Company plant. The tank was set up as shown for supplying water to engines.

Chief John Beck Dead

After serving more than thirty years as Chief of the Lehighton, Pa., Fire Department, John M. Beck died at his home following a heart attack. He was fifty-six years of age.

Chief Beck had been a fireman in Lehighton since 1903, when he became affiliated with the Lehigh Fire Co. No. 1. He succeeded Harry Trainer as Chief. A few hours before his death, the Lehighton Town Council had elected him again as Chief of the Department for 1940-41.

He was a member of the Four County Firemen's Association, the Pennsylvania State Firemen's Association, the Keystone Association of Fire Chiefs, and the Eastern Association of Fire Chiefs.

Schenectady, N. Y., Issues Report

The Department of Fire of Schenectady, N. Y., recently issued the annual report for the year 1939. The Department responded to 786 calls during the year, and the fire loss was $101,417.89, with a per capita loss of $1.06. This is the lowest loss for this city since 1920, but the greatest number of calls ever received by the department in one year. Included in the report is a complete breakdown of the calls and fire loss, the assessed valuations of the apparatus and equipment, appointments made during 1939, financial report of the Permanent Firemen's Pension Fund, and finally a list of recommendations for the improvement of the Department.

Celebrates 35th Year in Service

About thirty-five years ago, a young man was admitted into the Everett, Wash., Fire Department. Today, that man is known to his friends and members of the Fire Department as Chief C. E. Swanson. Chief Swanson came up through the ranks and was appointed to his present position in 1923.

Under his leadership, his department has come to be recognized for its high efficiency. The fire loss in Everett was fifty cents per capita last year. Chief Swanson is a past President of the Pacific Coast Association of Fire Chiefs, a past President of the Washington State Association of Fire Chiefs.

CHIEF R. J. SCOTT RETIRES; TO DIRECT I. A. F. C. WORK

Ends 35 Years of Fire Service; Becomes Managing Director of I.A.F.C.

Chief Ralph J. Scott, for thirty-five years a member of the Los Angeles, Calif., Fire Department, and for twenty-one years its Chief, resigns his position on April 1st to take over the management of the International Association's nation wide educational program. He becomes Managing Director on April 1st.

Chief Ralph J. Scott

Provision was made by the Directors of the Association at their annual meeting in New York early in February for the position of Managing Director, to be filled by some outstanding authority on fire fighting and fire protection.

The availability of Chief Scott, who is a past president of the Association and its present Chairman of Educational Committee, assured his selection for this important assignment.

An outstanding figure among Fire Department executives, Ralph J. Scott has occupied that responsible post for twenty-one years. Since the organization of the department in 1876, no other Chief has approached the same length of service.

Nearly all of Chief Scott's active life has been devoted to the Los Angeles Fire Department. He entered the service in the lowest rank, when he was 21, the minimum age of acceptance. Promotions came regularly through Civil Service competitive examinations.

Chief Scott has not hesitated to test innovations in his department, and was a pioneer in many branches of the fire service which have become standard practice throughout the Nation. Among these is the Fire College, conceived by Chief Scott and established in 1925. From modest beginnings, this institution now occupies a place of importance in the minds of forward looking fire executives everywhere. The plan was vigorously promoted before the International Association of Fire Chiefs by Chief Scott, both before and after his term as President of that Association in 1930.

The formation of a Major Disaster Plan, whereunder all available facilities for handling any major catastrophe might be brought into operation instantly, was conceived and developed by Chief Scott. Likewise, the extended use of photography, both still and motion, in the fire service was an innovation adopted first by him.

To the Association he will bring all this splendid background of experience.

Indiana State-wide Training Started

A class in Teachers Training for part time Fire Department instructors has just been completed at Purdue University, Ind. Classes are being started throughout the state, using the material from the Oklahoma A. and M. text books as a basic study, supplementing other materials. It is believed that about 2,000 firemen will be trained this year. When t. e firemen complete this course, they are all to be awarded diplomas from Purdue University in the Engineering Department.

The men selected as part time teachers are all members of some fire department in our state. Nine of the ten men selected are Drill Masters from paid departments, the other one is a Captain of a Volunteer Department. These ten men received intensive training in teaching for six days. The instructors were Chief Harry K. Rogers, Chief Engineer, Western Actuarial Bureau; Professor W. A. Knapp, Dean of Engineering and Director of Indiana Fire Service Training Schools; and the writer, Emmett T. Cox, Assistant Director of the Indiana Fire Service Training Schools.

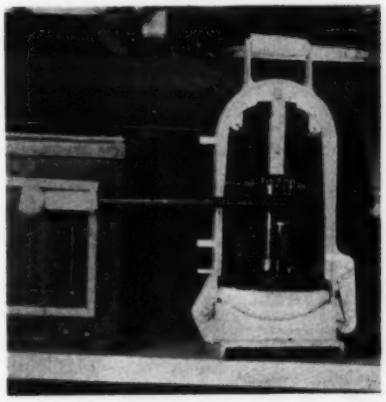
EMMELL T. COX

Comr. Murphy, Detroit, Retires

Because he established residence outside of the city limits of Detroit, Mich., C. Hayward Murphy, popular Fire Commissioner of that city, had no alternative but to tender his resignation. A local law requires all public officers to maintain residence within the city. Although the job of Fire Commissioner in the motor city is a payless one, no city official ever performed his duties more faithfully nor showed a more intense interest in the welfare of the fire service than the Commissioner.

New Water Shutoff

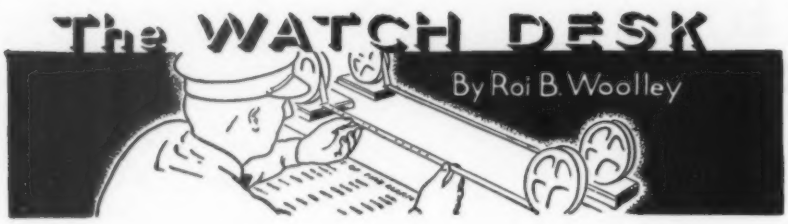
Two captains in the Minneapolis Fire Department, Minn., have just about completed work on their new B. & L. Shutoff. At first the clamp was operated by means of an auto jack, but this was found to be unreliable for fire service. A hydraulic pump was built and replaced the jack. The accompanying photo shows the details of construction. One of these latest shutoffs was demonstrated at the drill school all last summer with good results.



The B. and L. Shutoff in the Closed Position

It's Never Too Late to Learn

From the expression on the faces of this class, which is headed by Harry K. ("Smoky") Rogers, it is apparent that the work is interesting yet not too difficult.



Our inquiring reporter overhauls the firemanic news of the day

The Month's Orchids

This month's orchids to little Anna May Goldizen, aged nine, New York City, who rescued her two brothers Billy, aged five, and Martin, one and a half, when a short circuit ignited a Christmas tree in the Goldizen apartment on the fifth floor of a six story tenement.

The tree in the living room was in the center chamber of the three-room apartment. The children were alone, Martin playing in the bedroom, Billy in the kitchen with Anna May, who was preparing supper. Hearing the crackle of the flames, Anna pushed Billy into the hall through the kitchen door—only exit from the apartment—told him to call neighbors, then ran through burning living room to get Martin. She snatched him up, wrapped his head in her sweater, dashed back through the flames, which by this time were searing the ceiling. Neighbors and firemen confined fire to the one room.

Christmas Toll

Total deaths from violence in this yuletide given as 678, of which fires took 361!

The joyous(?) Yule has taken the place of July 4th as the season of tragedy from fire. Not all Christmas tree fires were cheated of victims as the above. In Hammonton (N. J.) ten-year old Joan Roork searching for gifts climbed to a cupboard, her dress brushed a stove, she caught fire, her mother tried to extinguish flames, both were taken to hospital in serious condition. . . . In Chicago, a mother, Mrs. Marie Worthley, left two children playing with toys and Christmas tree and the third and youngest in her crib while she went upstairs to telephone. Fire, caused, it is said, by an oil heater, killed all three. . . . A Christmas morning fire, half-hour after close of Christmas Eve' services, burned famous First M. E. Church, built in 1830, in Tuckahoe (N. J.), injured two firemen. . . . Another apartment fire, reportedly caused by oil heater, caused death of a sixteen month old baby in New York City. Due to watchfulness of a pet dog, two other children were saved. . . .In Passaic (N. J.), Roberta Johnson, aged eleven, died from burns caused when she tried to beat out flames in Christmas tree. . . . On Christmas Eve' fire took one life, injured four negroes, and a fireman, Emil Wildermuth of Eng. 37 in New York City. . . . In Bayonne (N. J.) thirty-six householders stored their Christmas presents in store of Simon Raicer and intended to call for them later. Well, fire called first, at 12:40 in the morning, entirely wrecked structure, consumed toys. . . . More pleasant tale is that of Mr. and Mrs. J. H. McGrath, Olathe (Kans.), who gave a Christmas party for twenty-eight children who saved their home from fire. The home, just outside city limits, took fire Oct. 6. No firemen responded, but children formed bucket brigade, helped carry out furniture, damage to $4,000 house being held to $1,200, covered by insurance. . . . Walter Pawl, aged eleven, went to light candles for midnight candle festival in Chelsea Presbyterian Church, New York City, when clothes took fire. An elder extinguished fire, Walter went to hospital. . . . When Mrs. Mary Mauro, Steelton (Pa.), went to count lights in family Christmas tree—a pine tree on her hillside yard—she fell from wall and was killed. . . . In Camden (N. J.) eight-year old Joan Roork of Hammonton got a celluloid wrist watch for Christmas, reached over stove, caught fire; Mrs. Roork, trying to put out flames, was badly burned. Child died. . . .

Hot Off the Ticker

Men have driven burning cars to firehouses before, but R. L. Elledge, Rock Island (Ill.), put frills on it, when he raced his jallopy to the F. D. He was forced out of car by flames and drove last three blocks standing on the running board. . . . Carl Hockeling, NYFD Eng. Co. 41, missed the "pole-hole"—fell and fractured leg. Yeah—an "unnecessary alarm" too. . . . Strange—and tragic, fire Lieut. John E. Murphy, Eng. Co. 1, NYFD died as result of injuries received when horse he was trying to save in a stable fire kicked him. . . . When an old English monastery had a Christmas party, fire intervened and twenty cripples were saved with difficulty. . . . When fire swept a reconditioned barn used as dormitory for feeble-minded boys, near Augusta (Ga.), five lads perished. There oughta be a law! . . . 400 persons were killed in a forest fire that raged for twelve hours in Eastern Korea. . . . Mrs. Irene Mayer, thirty, N. Y. C. became so "het up" at her hubby that she tried to burn up their home and herself. . . . A simple little bedroom fire took the life of NYFD probationary fireman Gerald Hanley, and sent two others to hospital. . . . Near Waterford (N. Y.) five youths were killed when they fired bullets into 200 pounds of dynamite in a steel-covered magazine. . . . In Hoboken (N. Y.) fireman Martin Behan, sixty, fell through the pole-hole at Truck 2's house, landed on concrete fourteen feet below, and died from injuries. . . . Nine high school students and two Swampscott firemen who tried to rescue them, were saved by Marblehead firemen from a cold death; a fifty-foot extension ladder was successfully used. . . . Leaky gas main felled twenty-nine girls in basement of a Brooklyn (N. Y.) ready-to-wear store. . . . One fireman, Charles Monaghan, was drowned and thirteen others were overcome by illuminating gas in basement of a burning So. Philadelphia apartment house. . . . When Transfiguration Church, Buffalo (N. Y.) caught fire, five nuns formed bucket brigade and confined flames to a side altar. . . . They're investigating the fire that destroyed priceless relics in the Palazzo Cancelleria, Rome, Italy. . . . Other art treasures, sent to Canada for safekeeping during the war, was damaged by fire in the Metropolitan Gallery of Fine Arts, Toronto. . . . 540 pupils fled as flames enveloped Point Street Grammar School in Providence (R. I.), seven persons being injured. . . . Escaping gas killed four children in bed in Perth Amboy (N. J.); one saved. Parents had left them alone. . . . And of course, the tragedy to start the year off **wrong** was that in Minneapolis, where over twenty persons died in an apartment house fire.

The Month's Boner

'Cording to our New England contrib' the barbed-wire whatsis, the hand-painted thundermug and the peuter earspoon go to the Malden (Mass.) truck company the driver of which left the house so speedily to answer an alarm that he never noticed his tillerman's absence. He found out when at the first sharp corner the truck brought up with grinding crash against telephone pole.

No Whiskers!

Braves of Butte (Mont.) filed a "hurt" protest at recent order requiring all members to grow beards in order to enact role of early-day bearded, fast-shooting, law-enforcing officers at the Treasure State Golden Jubilee celebration, beginning July 1. They point out dire consequences should hirsute appendages catch fire in performance of their duties.

One Killed Six Hurt in Fire Truck Upset

Antonia Fanizzi, 45, of Milton (N. Y.), volunteer fireman, was killed and six persons—three of them vamps—were injured when a Milton fire truck collided with an auto two miles south of Milton. Injured were taken to Poughkeepsie hospital where their condition was reported as critical. First reports were that nobody knew why fire truck was on the road.

Some "Believe-It-or-Nots"

From E. L. Robinson, Des Moines, comes tale of the citydads of Bloomington (Ind.) who revived ancient curfew law requiring kids under sixteen to be home before 10:30 p.m. in effort to curb juvenile crime wave. Well, they couldn't find a bell or whistle loud enough to play the "curfew," so they finally hit on plan of driving the fire truck into the street at curfew-time and letting go with all sirens!

* * *

And this one from the demon fire reporter, Johnny Weisberger: It's about farmer Herman Shultz of Le Mars (Ia.) who thought he was driving a load of fence posts to town in his trailer but when he arrived and got out to unload his cargo, he found only the framework of the trailer remained. The box and posts had burned during the trip.

* * *

And then there's the yarn, from an undisclosed contrib', about the mice that went to a Christmas party out in Anthony (Kans.) at the Dixon rural school, and got so hilarious they ate a box of

matches—starting a fire that destroyed the Christmas tree and all the presents.

—And from Otis Smith

Gotta give room to two items from busy fellow-scribe Otis Smith, down Balt'mo' way. He tells us about Baltimore Brothers who may now wear dungarees in quarters, change being affected when objections were raised to the lads having to wear their $11 pants around the house—and roll to fires in 'em.

Other item concerned the prank of playful(?) gink with cigarette and gas-filled toy balloons. Out at exclusive country club in Baltimore's Roland Park, they charged dozens of toy balloons with gas. Came the prankster with the lighted "butt"—and Bango! Luckily only one let go. What might have happened if the lot exploded! Oh well, there's one born every minute!

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of February, 1940. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending February 28	Loss in Thousands of Dollars
Thief River Falls, Minn.—Plant of Math Barzen Co., damaged	80
Davenport, Iowa—Montgomery Ward store destroyed	100
Martinsville, Ind.—Cohn-Barnard Sanitarium destroyed	50
Fall River, Mass.—Former Wettamoe mill property	200
Shippensburg, Pa.—U-Wan-A-Dress factory building destroyed	50
Westerly, R. I.—Park Building, housing business concerns	50
Bridgeport, Wash.—Siwash Orchard Cold Storage Plant	50
Brantford, Ont.—Whse. of Marks Transport Co., destroyed	60
Morrilton, Ark.—Whse. of Morrilton Cotton Oil Co., destroyed	65
Greenville, S. C.—Business property on South Main St.	50
Paris, Ark.—Dwelling of J. Barger, destroyed	50
Ottawa, Kan.—Sacred Heart Catholic Church destroyed	60
Amsterdam, N. Y.—Business property at 67-9 E. Main St.	50
Tyler, Tex.—Walker-Daniel Funeral Home damaged	65
Redondo Beach, Cal.—Plant of Golden State Fireworks & Display Co., adj. property	125
Pompton Lakes, N. J.—Washington Building destroyed	100
Chicago, Ill.—Barnard Elementary Experimental School	125
Smethport, Pa.—McKean County Courthouse damaged	200
Forest Hills, N. Y.—The Show Bar, owned by H. R. Moss	50
The Dales, Ore.—High School destroyed	200
Cannelton, W. Va.—Store of Cannelton Coal & Coke Co., destroyed	50
Bowling Green, Ky.—Smith's Grove Consolidated School, 13 mi. north	50
Troutrun, Pa.—Troutrun Hotel, adj. property	60
Burlington, Vt.—Hotel Milner and adj. property	400
Combined Locks, Wis.—Whse. of Combined Locks Paper Co.	50
Boston, Mass.—Mercantile Wharf Co. property	50
St. Louis, Mo.—U. S. Government property at 306-08 S. First St.	80
Scotsbluff, Neb.—Garbage and 25 automobiles of Stockfleth Chevrolet Co.	100
Corsicana, Tex.—Fortson Grocery Co. plant destroyed	80
Yonkers, N. Y.—Custer Arms Apartment House damaged	80
Delavan, Wis.—De-Koven Dormitory of St. Johns Military Academy	65
Metter, Ga.—Wright building destroyed	50
Chicago, Ill.—Whse. of Reserve Supply Corp., destroyed	50
Springfield, Ill.—Processing Plant of Illinois Soy Products Co.	125
Greensburg, Pa.—Plant of Greensburg Lumber Co., damaged	50
Hamilton, Ohio—Mill of Hamilton Lumber Co., destroyed	80
Milford, N. J.—Milford Christian Church destroyed	50
Stoneham, Mass.—Bell Block—occupied by business concerns	50
Buffalo, N. Y.—Plant of Washburn-Crosby Co., damaged	400
Kingfisher, Okla.—Grain elevator header house destroyed	50
Jacksonville, N. C.—High school destroyed	80
Winston Salem, N. C.—Central Hotel and adj. property	80
Timmins, Ont.—Friedman dept. store and adj. property	160
Watertown, N. Y.—Evans Wholesale Grocery and adj. property	65
Newark, N. J.—Factory of Williamson Wire Novelty Co.	50
Mena, Ark.—High School structure damaged	50
Stamford, Conn.—Novelty store of C. C. Murphy Co., destroyed	80
Drumheller, Alta.—Alexandra Hotel destroyed	50
Shreveport, La.—Business property on Texas Avenue	65
Rochester, Ind.—Winter quarters of Cole Bros. Circus damaged	125
Los Angeles, Cal.—Plant of Dura Steel Products	50
Lafayette, Ga.—Telephone bldg. and adj. property	50
Marion, N. C.—High School bldg. damaged	50
Albany, N. Y.—Property of Hudson Valley Paper Co.	160
Canton, Ohio—Property occupied by Woolworth store destroyed	125
Pendleton, Ore.—Thompson whse. and adj. property	65
Corrigan, Tex.—Business and residential property	50
Red Star, W. Va.—Whse. of Star Coal & Coke Co., destroyed	50
Slagle, W. Va.—Tipple and Theatre of Logan County Coal Corp.	160
Paducah, Ky.—Taylor bldg. damaged	50
Port Mann, B. C.—Bldg. of Canadian National Railways	80
West Lebanon, N. H.—West Lebanon High School destroyed	80
North Kannapolis, N. C.—Colonial theatre bldg. damaged	50
Crowder, Okla.—School bldg. damaged	50
Crafton, W. Va.—Mill of Woodyard Lumber Co., destroyed	50
Springfield, Mass.—Super-market of Rood & Woodbury destroyed	50
Detroit, Mich.—Business and apt. property of Sarbnowski estate	165
Hernando, Mass.—County court house destroyed	50
Youngstown, Ohio—A. & P. market damaged	50
Troy, Ohio—Home of Mrs. M. J. Hayner damaged	80
Hartford, Conn.—Bldg. of Russel Mfg. Co., destroyed	250
Hazelhurst, Ga.—Planters whse. and adj. property	80
Middletown, Conn.—Otterbein mill of Russell Mfg. Co.	400
Reading, Pa.—Milner Hotel bldg. damaged	50
Turtle Creek, Pa.—Harper building destroyed	50
Prescott, Ariz.—Tilton bldg. N. Cortez St.	65
Chicago, Ill.—Wm McGee garage on Indinan Ave., destroyed	50
Forest, N. Y.—High school bldg. destroyed	60
Ithaca, N. Y.—Business property 119-31 E. State St.	50
Salem, Mass.—Salem Commercial School damaged	65
Montreal, Que.—Business and apartment property damaged	65
Cadillac, Mich.—Plant of Ensign-McGovern Lumber Co., destroyed	65
Cleveland, Ohio—F. Zimmerman Co. factory damaged	65
Madison, Ind.—Johnson Foundry & Machine Shop destroyed	50

History of Styles

A chart in colors has been published by the Insurance Company of North America, which shows Philadelphia at about the time of the company's founding in 1792. It shows the location of the original volunteer fire companies.

From this sheet are reproduced the sketches showing the costumes of the early fire fighters.

The sheet measures twenty-seven by thirty-five inches, and a limited edition has been printed.

Styles of the Uniforms Worn by Volunteer Companies in Philadelphia

McElligott Applies for Retirement

Fire Chief and Commissioner John J. McElligott, of the New York City Fire Department, applied for retirement from the Department on February 23. Also asking for retirement at the same time were Deputy Chief Geo. L. McKenna, Deputy Chief James W. Heffernan, Battalion Chief Jacob Levy, Chief Medical Officer Joseph E. Smith, three captains and one lieutenant.

Fire Chief and Commissioner J. McElligott

Because a new pension law, which permits less latitude on the part of the Commissioner in granting pensions above the scale, goes into effect on March 29, Mayor LaGuardia refused to accept the resignations. With the exception of Chief and Commissioner McElligott and Battalion Chief Jacob Levy (the latter applying to retire at regular scale) all of the group would suffer a reduction in pension after March 29. Just what the outcome of the proposed group retirement will be is uncertain at this time.

Upon receipt of the application for retirement, Mayor LaGuardia appointed Assistant Chief Patrick Walsh as acting Chief of the Department and Deputy Fire Comr. Elmer Mustard, as Acting Commissioner. Deputy Chief John J. McCarthy was designated Assistant Chief. Acting Comr. Mustard served but four days in his new post when he died of heart failure a couple of hours after leaving his office for the day.

Chief McElligott, who was born in New York on Aug. 25, 1884, attended Syracuse University, and after civil service examinations was appointed an engineer in 1910, lieutenant in 1913, captain in 1914, chief of battalion in 1922 and deputy chief of department in 1925. In 1930 he was appointed assistant chief of department and became a member of every executive board in the department.

In the examination for Chief he had received the highest rating among twenty-eight other officers. His grade was 87.08, and he was closely pressed by Deputy Chief Heffernan, who had 86.37.

Chief McElligott was appointed Commissioner of the department on Jan. 18, 1934, by Mayor LaGuardia, the first man from the ranks to rise to that post. He was the department's tenth chief, appointed to that position by former Fire Commissioner John J. Dorman, on March 1, 1932, following the examination referred to above.

Fire Stations Condemned

About a dozen Los Angeles, Cal., Fire Stations of frame construction have been in use for over thirty-five years. They are so run down that they do not warrant any expenditure for improvement. The dilapidated condition of so many Fire Department buildings is the result of not setting up sufficient money for maintenance in the annual budget. It is reported that only about $183,614 has been budgeted during the last ten years for maintenance of the many Fire Department structures. The construction of two new stations has been authorized, one costing $60,000 and the other about $55,000.

College Students Fight Fire

Four Iowa State College students each year earn their lodging by fighting fires in Ames, Iowa. They live in Fire Station No. 2, which is located on one corner of the college Football Stadium.

The Assistant Chief and another full time fireman have charge of the station, while the four students compose the crew. The four students buy their own food which is cooked by the regulars. The students are not allowed to drive the engine nor man the pump, but they do perform all other fire duties. The students' quarters are similar to college dormitory rooms, containing desks, lamps, and a radio.

This fire unit answers all calls from the campus and the surrounding vicinity as well as calls at public buildings.

Chief Stevens Honored

Jay Stevens, State Fire Marshal for California for the past sixteen years, was honored when ninety-five chiefs of as many Southern California city Fire Departments gathered at their Bi-annual Convention at San Diego, Cal. At an elaborate banquet concluding the meeting, Fire Chief Ralph Williams of Fresno, Cal., Second Vice President of the I. A. F. C., made a presentation to Chief Stevens of a plaque of silver, mounted on wood and ornamented with the

The Plaque That Was Presented to Chief J. W. Stevens

shields of the ninety-five chiefs who comprise the membership of the conference. The shields are of solid gold and each bears the name of the city it represents.

Public Learns of Fire Prevention

The largest attendance of the season of the Industrial Safety School in Dayton, Ohio, heard a review by Richard E. Vernor on a program of "Fire Prevention—Up to Date." This was the fifth meeting of the School which is being sponsored by the Dayton Chamber of Commerce.

Vernor, a representative of the Western Actuarial Bureau of Chicago, stressed the large fire loss both personal and property, and quoted records to show that many of the conflagrations might easily have been prevented. It was pointed out that many simple, but potential, hazards are easy to correct. It was cited that if city safety campaigns are to be successful, public cooperation is essential.

Members of the Dayton Fire Department staged a demonstration of modern fire fighting and life saving methods. The demonstration portrayed the fighting of an explosion, fire, and gas pocket in an industrial plant.

Group Picture of the Members of California Fire Chiefs Conference, Southern Division

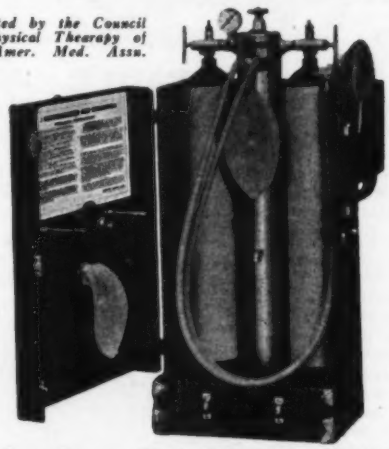
YOU CAN'T BEAT THIS COMBINATION!

Aspirator—Resuscitator—Inhalator

—3 Machines in 1—

Easy to change from one to the other and simple to operate.

Accepted by the Council on Physical Therapy of the Amer. Med. Assn.



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A demonstration will not obligate you to buy. Write today for full particulars.

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Best Battery Protection You Can Get

General Electric Tungar Battery Chargers have earned a widespread reputation for efficiency and dependability in the fire fighting field.

Regardless of the way you want to charge your apparatus batteries, there's a Tungar Charger to do the job; in position, or out of the truck, your batteries will be "right up to snuff" if you let a G-E Tungar Charger take care of them.

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Write for a G-E Tungar Full-line catalog now. Section A-0863, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

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IT'S PORTABLE SELF CONTAINED WORN LIKE A VEST

Kerotest EMERGENCY CUTTING EQUIPMENT

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Wearer's legs, arms and hands are perfectly free at all times as all parts are strapped close to the body, enabling firemen to climb ladders or work in very close quarters without the slightest inconvenience. Descriptive literature sent upon request.

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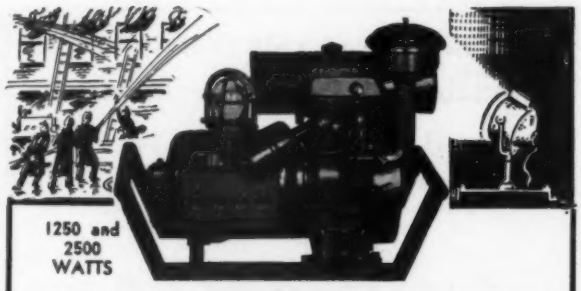

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"U. S." PORTABLE LIGHT PLANT

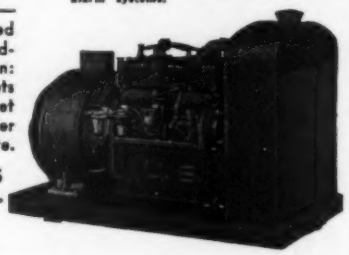
This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size, same design.

We are builders of the world's most complete line of Electric Plants. In all parts of the world —arctic expeditions or tropical plantations — U. S. plants have proved their steadfast dependability. And the reason: "U. S." generating sets are designed to meet the conditions under which they will operate.

LARGER SIZES

Larger sizes are available. Illustration below is 5 KW 4-cylinder Portable Unit. Automatic remote control. Write for complete information.

Also automatic emergency units for alarm systems.



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Reduce the 75% of all fire losses directly due to water damage.

Drill your men in their efficient use.

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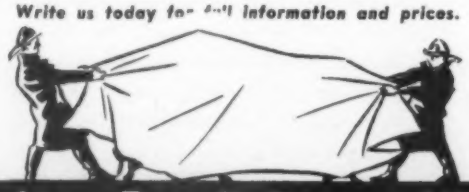

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Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS NEW YORK
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Here is a Gold Mine of Practical Information for Modern Fire Fighters--

THE FIRE CHIEF'S HAND BOOK

By FRED SHEPPERD

In Collaboration with the EDUCATIONAL COMMITTEE *of the* INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

THERE have been books on fire-fighting, but never anything so complete and authoritative as the "Fire Chief's Handbook." This book gives a reliable, up-to-the-minute answer to almost every question that might come up in modern fire-fighting practice.

For progressive fire chiefs, interested in up-to-date fire fighting methods, the "Fire Chief's Handbook" will be a mighty valuable reference guide. It gives to ambitious fire department officers and men, in plain, understandable form, information that should prove extremely helpful in preparing for promotional examinations. In fact, it is a book every fighter needs and ought to have. *The Edition Is Limited— Better Order Your Copy Today.*

$4.00 *per copy postpaid Book Dept.*

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24 West 40th St., New York, N. Y.

Among the Fire Fans

By Otis Smith

MEMBERS of the Fire Bell Club (New York City) held their first annual dinner in the Martinique Hotel on Feb. 15, where covers were spread for 125. The dinner was enlivened by a prop engine house alarm bell, used to signal the next course. The appetizer started with signal 3-695-1; the soup got under way with 2-2-695; the main course (roast beef) was entitled "increase blood pressure," accompanied by signal 8-695-200, for 200 pounds high pressure; the dessert was led off with 3-3-695 and the coffee was "take up." The entertainment was entitled "3-3-3," for the reason that all performers were "men only."

The principal speaker of the evening was Deputy Assistant Chief John J. McCarthy, as the personal representative of the Commissioner. B. D. Branch, veteran buff and senior member of the club, responded to Chief McCarthy's encouraging message. He declared that the club and its members "have no axes to grind" and "none of us are fire insurance adjusters." We have no criticisms; no candidates for office in the Fire Department; it is not our ambition to mar or hurt anything or anybody. We don't want fires to happen, but if they do—well, that's a different story—but we'll know our place if we happen to be around."

Dr. Harry Archer, the "Janitor" of the Cycle Club, entertained the guests with some witty and pointed stories of his experiences in the days of Croker and Kenlon and he had the buffs in high glee with his narratives. Chief Ross took a bow and so did Asst. Chiefs O'Hanlon and McKenna; Deputy Chiefs James A. Quinn and Martin Carrig; Deputy Chief Bill Cashman of the Fire Patrol; Batt. Chiefs Dower and Quigley; Dr. George Schwartz; Fireman Edward Thompson of the St. George Assn.; Fire Marshal Tom Brophy; Johnny Weisberger and Syd. Livingston, the Eve. Journal reporters who love to go to fires, and ever so many more buffs.

Additional information on the Maltese Cross comes to us from Capt. Tom Magner, Bridgeport, Conn. Capt. Magner suggests that the fire badge is not a Maltese Cross, but a Cross Pattee. The Maltese Cross is an eight pointed star and is sometimes confused with the Cross Pattee. David T. Dickinson, 1588 Massachusetts Ave., Cambridge, Mass., also writes that the name Maltese Cross is often wrongly applied to the Cross Pattee. As described in Clark's Heraldry the Cross Pattee, or spread out, is one which is small in the center, and so goes on widening to the ends, which are very broad. It is this latter form of cross which is so extensively used as a device by our Fire Departments.

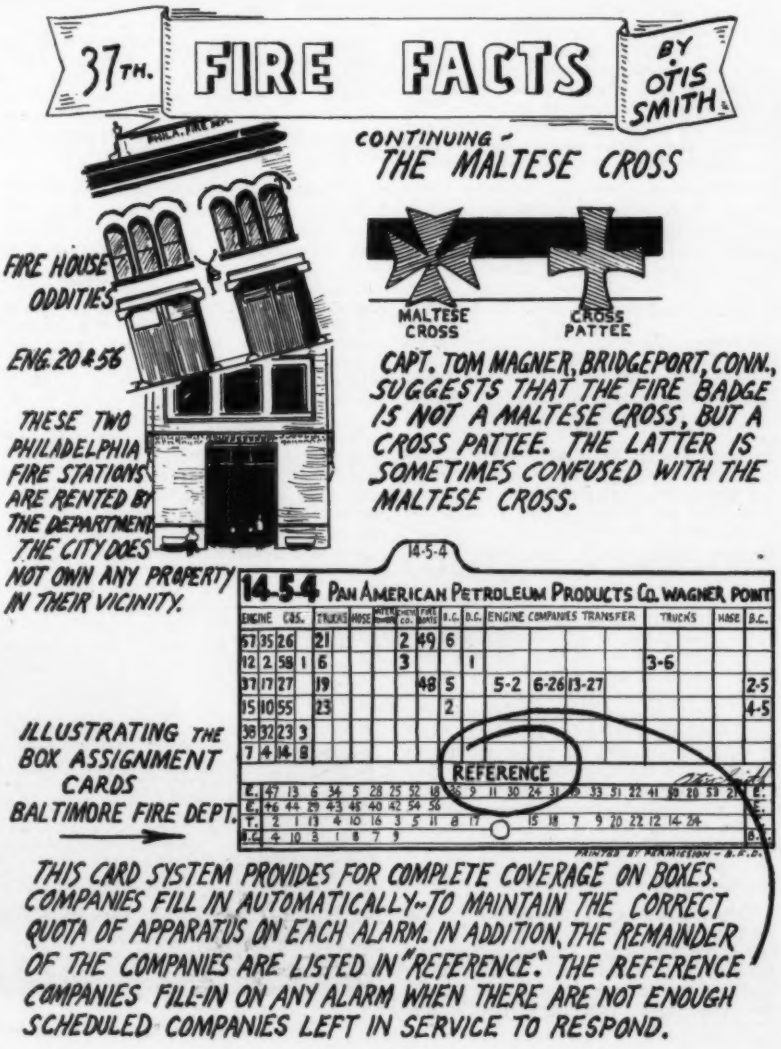
A cross of this form was introduced by the Knights of the Teutonic Order during the crusades in the twelfth century and became the familiar "Iron Cross." The Greek Cross is another form of cross seen on firemen's uniforms, so-called from its adoption by the Orthodox Eastern Church or "Greek Church." According to Brayley's History of the Boston Fire Department, a Greek Cross of white metal was adopted as a cap device for the privates in the Boston Fire Department on Sept. 12, 1874.

Visiting in Baltimore last month was Gordon R. Mullins, 305 East 88th St., New York, N. Y. Gordon is a Charter Member of the Fire Chiefs' Club of Vermont. He mentioned the newly formed "Signal Club" of Detroit. If this catches the eye of anyone in Detroit, how about a story on this new outfit?

Thanks to the Home Insurance Co., New York, for that swell book on the old New York Volunteer Fire Department. And thanks to the several persons who wrote in response to my plea in last month's column, telling me where the book was printed. Among those writing were: Jimmie Jackson, Oswego, N. Y.; Joseph W. Orendorf, Jr., Detroit; George D. Cram, President of the Protecting Society of the New Bedford (Mass.) Fire Department; George W. Clough, Fire Marshal of Nassau County, N. Y.; Chief Edward F. Dahill, New Bedford, Mass.; Wm. N. Schwartz, Ocean Grove, N. J., and Wm. Patterson, Pittsburgh Bureau of Fire.

J. Emory Parks, Rescue Fire Co., Cambridge, Md., tells of an interesting fire bell in possession of his company. It was originally an old Mission bell, believed to have come from Mexico. This bell is of the crown head type, and bears on one side a bas relief of a Crucifix, and on the other side a bas relief of the Madonna and Child. The inscription reads as follows: "Fait. Par. Jean Bazin. A. Nantes. 1772.", which shows it was cast in the City of Nantes, France, in the year 1772. Thanks for the accurate sketch of the bell, Emory; I'll hold it for use next month.

Wm. E. "Scrappy" Patterson writes that he would like to contact those with actual snap shots of fire to trade. Mr. Patterson's address is Pittsburgh Bureau of Fire, City-County Bldg., Pittsburgh, Pa. . . . "Jimmie" Jackson, 147 E. Cayuga St., Oswego, N. Y., wrote in as usual. . . . Wm. C. Peck, 18 Henry St., New London, Conn., says that he is a camera fire fan and has many shots of


37TH. FIRE FACTS
BY OTIS SMITH
CONTINUING - THE MALTESE CROSS
MALTESE CROSS
CROSS PATTEE
CAPT. TOM MAGNER, BRIDGEPORT, CONN., SUGGESTS THAT THE FIRE BADGE IS NOT A MALTESE CROSS, BUT A CROSS PATTEE. THE LATTER IS SOMETIMES CONFUSED WITH THE MALTESE CROSS.
FIRE HOUSE ODDITIES
ENG. 20 & 56
THESE TWO PHILADELPHIA FIRE STATIONS ARE RENTED BY THE DEPARTMENT. THE CITY DOES NOT OWN ANY PROPERTY IN THEIR VICINITY.
14-5-4
14-54 PAN AMERICAN PETROLEUM PRODUCTS CO. WAGNER POINT
ENGINE COMPANIES TRANSFER
TRUCKS
HOSE
B.C.
5-2 6-26 13-27
3-6
REFERENCE
ILLUSTRATING THE BOX ASSIGNMENT CARDS BALTIMORE FIRE DEPT.
THIS CARD SYSTEM PROVIDES FOR COMPLETE COVERAGE ON BOXES. COMPANIES FILL IN AUTOMATICALLY--TO MAINTAIN THE CORRECT QUOTA OF APPARATUS ON EACH ALARM. IN ADDITION, THE REMAINDER OF THE COMPANIES ARE LISTED IN "REFERENCE." THE REFERENCE COMPANIES FILL-IN ON ANY ALARM WHEN THERE ARE NOT ENOUGH SCHEDULED COMPANIES LEFT IN SERVICE TO RESPOND.

department work in his city. He would like to hear from others who take fire pictures. . . . William N. Schwartz, 72½ Embury Ave., Ocean Grove, N. J., would like to trade apparatus pictures. Mr. Schwartz is a member of E. H. Stokes Engine Co. No. 3 of the Ocean Grove Fire Department.

Willie Fisher, 420 Fairmount Ave., Oakland, Calif., says that he has a large collection of fire apparatus pictures, from the old hand pump to the modern type. He also has a collection of fire department tools, and is interested in securing a fire apparatus bell. We imagine that fire bells are rather scarce as collector's items, but this may be a chance for someone to make a trade.

The February copy of the Phoenician News has been received; also a letter from Mr. Al Fryer, head of the Phoenix Society, San Francisco. The Society has monthly dinner meetings which are called at 6:30 and very often last until midnight and after. We usually have our regular business meeting after the dinner, then round-table discussions of recent fires and fire prevention and protection subjects. We generally have a guest speaker to talk on a subject pertaining to some branch of the fire service.

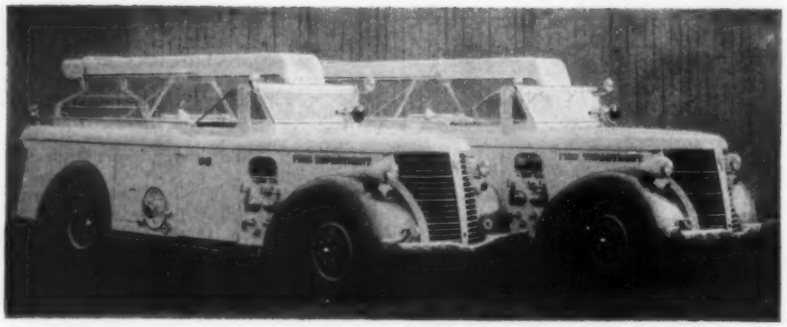
An annual award, usually in the form of a gold watch, is presented to a member of the San Francisco Fire Department for exemplary service over a period of years. This award is not made for single acts of heroism or bravery. The awards are made by the members of the Society after examination of the San Francisco Fire Department's service records.

The Phoenician News is a monthly record of the club activities. It is published under the direction of Richard H. Selig. Address of the Society is No. 7 Front St., San Francisco, Cal. Mail should be addressed to Mr. Al. Fryer.

Thomas Smith, Fire Department, Corvallis, Oregon, would like to hear from builders of fire apparatus models. Mr. Smith is a beginner in model building and would like some information on the subject. . . . A letter from Edward Sprangers, 2228 W. Oakdale St., Philadelphia, in which he regrets that he does not know any amateur radio operators who also are fans. I had thought of listing the call letters, etc., of any "ham" stations operated by fire fans. This would enable them to exchange fire fans' news hot off the ticker.

The running card, reproduced in Fire Facts this issue will probably interest many fans. It is unusual among running cards, in that it lists practically every company in the department on every card. Companies fill in from the card, without waiting for the alarm office to order companies to cover up on an alarm. The responsibility rests on each company commander to figure out the right move when successive first alarms strip a part of the city of fire apparatus. Of course, the alarm office also can order special transfers and fill-ins, that are not listed on the cards.

The address of Otis Smith is 319 Gwynn Ave., Baltimore, Md. In the last issue, the word Baltimore was left out and one letter finally arrived after having been to every post office around the city, and including Washington, D. C.



Two New 750-Gallon Pumpers for Baltimore, Md.

Delivery of these two pumpers completes an order for six of these American-LaFrance pumpers purchased by Baltimore. These machines represent a departure from regular apparatus painting, in that the trucks are white, trimmed with blue and gold, and the fenders are painted Fire Department red.

First Aid and Booster Apparatus Installed

The Lindenhurst, Long Island, Fire Department has just commissioned a completely equipped Mack Type 45 first aid and booster apparatus.

For quickly extinguishing fires this new apparatus is equipped with a pump of 100 G.P.M. capacity and a 150-gallon booster tank. The streamlined body of the unit incorporates many compartments, accessible from the outside, in which are carried such miscellaneous items as inhalators, a Stokes splint stretcher, and other first aid and fire-fighting equipment.

The interior of this new unit is finished like a modern ambulance, the driver's compartment being separated from the body by a partition with sliding window. Roof and sides of the body interior are lined with imitation leather, and there are two leather upholstered seats running the entire length of the body. These seats have folding sections which can be raised to accommodate three stretchers in the body. Other equipment carried inside the body includes a first aid cabinet with drawers and a cabinet for heating pads and blankets. There are also compartments for carrying stretchers and oars. The oars are carried for rescue work when the unit is called to the water's edge. Other interior fittings include four dome lights and wall plugs for the heating pads and heaters in both body and cab.

Six-Hour Blaze Sweeps Through Novelty Store

A general alarm fire razed the G. C. Murphy Company in the central business district of Stamford, Conn., in February. A hundred firemen, under the direction of Chief Victor H. Veit battled the blaze for six hours. Ten lines of 2½-inch hose were played into the building. All Stamford firemen and equipment were used in the six-hour battle, in addition to volunteers from Glenbrook, Springdale, and Old Greenwich. Several adjacent structures were damaged by smoke. The total estimated damage was about $75,000.

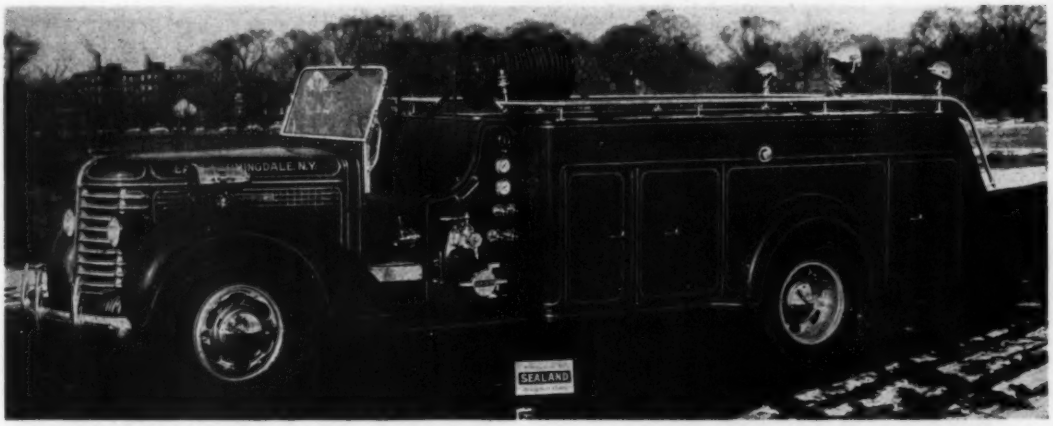
Fire Truck Driver Sued for Accident

A suit, arising out of a collision between a Belleville, N. J., fire engine and an automobile, which occurred on November 13, 1936, has reached a settlement with the driver of the fire truck agreeing to pay $1,250. The accident occurred in Upper Montclair, N. J., when an auto driven by a woman, going west, collided with the fire truck, going north, in response to a fire alarm. Circuit Judge Caffrey ruled that the right of way given fire engines, ambulances, police cars, and doctors' autos under the traffic act is limited to exercising that right of way with care.

Side View of the Rescue Unit in Service in the Lindenhurst Fire Department

Custom-Built . . . at Standard Prices

A modern triple combination pumper delivered to East Farmingdale, L. I.



Specifications: 500 gallon pump, 500 gallon booster tank, 1000 ft. 2½-in. double jacket hose, two lengths of 4½-in. suction hose and 200 ft. ¾-in. booster hose, and six large side compartments.

THE SEALAND CORPORATION ● Bridgeport, Conn.

FIREMAN'S NEW SAFETY COAT MEETS WITH GREAT APPROVAL

MANY CITIES ADOPT MIDWESTERN COAT

The new Midwestern Safety Coat recently introduced has met with instant success because Fire Chiefs, Firemen, and Safety Boards quickly saw its adoption meant a big decrease in bad accidents.

The picture tells much of the reason for the success of this Midwestern Coat. Firemen can be seen on dark nights—through fog, and smoke. Fewer men will be knocked off ladders and buildings by heavy hose streams . . . will be more easily found in fallen debris.

Midwestern has developed a new exclusive rubber cloth in which the white stripe is molded in. It is rubberized as a part of the material and is not sewed in or glued on.

Another great feature is the famous Midwestern Safety snap that can be instantly fastened or unfastened with one hand.

Note Chiefs:
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Manufacturers of a complete line of firemen's quality clothing.

FIRE PUMPS HALE CONSHOHOCKEN

SPECIFY HALE

—because Hale Fire Pumps will give you lasting protection at minimum expense.

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HALE FIRE PUMP COMPANY
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World's largest pump manufacturers building fire pumps Pumps--and pumps only--since 1873

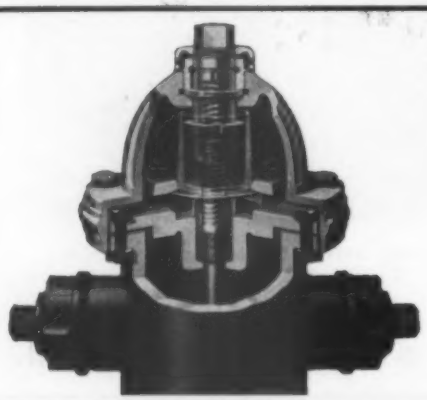
Dear Mr. Fire Chief:
Selecting a new fire pump is a tough job. You are held responsible for your recommendation, and there are many reliable fire pumps on the market today. You cannot go wrong, however, if you suggest buying one of our Barton-American **Front Mounted or Midship Mounted** Pumps - because we not only sell an up-to-date fire pump, but give you

HIGHER PRESSURES AT LOWER ENGINE SPEED

the advantage of which you will readily appreciate.

**We shall be glad to give you any desired information.
Write us for bulletins and specifications covering our complete line.**

Thank you for your attention. Yours very truly,
AMERICAN-MARSH PUMPS, INC., Battle Creek, Michigan



MUELLER-COLUMBIAN FIRE HYDRANTS

The SELF OILING feature of these hydrants is a favorite with Fire Chiefs. They like it because they know the threads cannot rust, it cannot freeze, and the operating nut will always turn easily. There's no time lost hooking up to a Mueller-Columbian.

WRITE FOR FULL INFORMATION

Mueller Co. Chattanooga, Tenn.

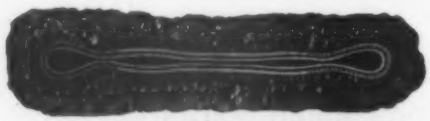
HAHN FIRE APPARATUS

Air-Cooled or Water-Cooled
Powered Apparatus

HAHN MOTORS, INC. **HAMBURG, PA.**

NORTHERN PUMP COMPANY

ESTABLISHED 1907
MINNEAPOLIS, MINN.



This is the new LIGHT WEIGHT BI-LATERAL FIRE HOSE

This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive **Chicago, Illinois**

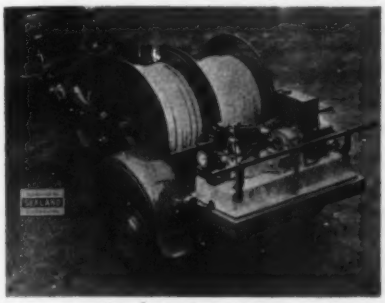
Valuable Information

All the manufacturers you will find represented in our advertising pages have interesting and valuable data about their equipment which is yours for the asking. When writing, be sure to mention FIRE ENGINEERING.

Manufacturers' Announcements

Mobile Portable Unit

The Sealand Corporation, Bridgeport, Conn., manufacturers of fire control products, has recently designed, and applied for patents on a new trailer pump



The Trailer Unit Hooked to an Automobile Is Ready for Call

unit. This unit is equipped with a 100-150 gallon pump at 120 pounds discharge pressure. There are two reels of hose; one carries 500 feet of one-inch hose, and the other reel carries 800 feet

The Portable Unit in Operation

of 1½-inch hose. Power is supplied by a 22 h.p. four cylinder water cooled engine. The engine can be equipped to carry a foam generator. Two lengths of draft hose and nozzles complete the equipment. The whole unit is mounted on a Ford V-8 trailer.

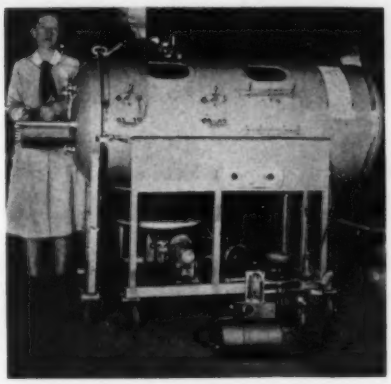
Non-Rubber Gaskets

The use of Koroseal, a rubber like material made from coke, limestone, and salt by the B. F. Goodrich Company, Akron, Ohio, has been broadened again. It is now being used in the manufacture of swivel gaskets for both municipal and industrial fire hose. The manufacturer of this product claims many advantages in the use of Koroseal for this purpose over rubber gaskets, among which are: The smooth glaze on the surface of Koroseal enables the couplings to be tightened by hand, thereby eliminating wrenches. The Koroseal does not harden with age. This product does not contain sulphur. The new gaskets do not swell or lose their shapes because there is practically no water absorption by Koroseal.

New Portable Power Plant

For standby service for hospitals in case of power line failures, emergency, Fire Departments, and safety divisions, the Kato Engineering Company, Mankato, Minn., has introduced models KE-400 and KE-600 of the portable Katolight power plants.

These self-contained units are driven by a four cycle air-cooled engines. They come equipped with hand lever starter, high tension magneto, pilot lamp which lights area around the unit, three twist lock receptacles, two standard receptacles, and convenient carrying handles. These units are suited for operat-



Power Plant Unit Is Shown Operating an Iron Lung

ing portable floodlights, drills, saws, radios, transmitters, and receivers. Model KE-400 weighs sixty-five pounds and Model KE-600 weighs 105 pounds. Catalogs are available on request.

New Extension Ladder

A new four-piece aluminum extension ladder for fire departments, entailing several improvements over others now on the market, has been recently developed by the Aluminum Ladder Company, 200 Adams Street, Tarentum, Pa.

Designed especially for use on short equipment, the unextended ladder measures only fifteen feet. The ladder extended measures forty-five feet and weighs 165 pounds. The butt ladder and second ladder are equipped with rope and roller bearing tackle blocks for raising. The fly ladder and the third ladder, fitted with a ¼-inch steel cable, work automatically with the second ladder. When the ladder is being raised by pulling the rope, it is necessary to watch only the locks on the second ladder. The third and fly ladders lock and unlock automatically. Both the top and bottom ends of the ladder are rounded; the top for sliding along buildings and the bottom to guard against catching the clothes while climbing.

It is claimed that four men can handle the ladder very easily with or without staypoles.

Flames Trap Animals in Their Quarters

Fire, the jungle beasts' worst enemy, swept through the winter quarters of the Cole Brothers and Robbins Circuses in Rochester, Ind., roasting about 150 lions, tigers, leopards, and monkeys in their locked cages. Approximately 350 horses, elephants, camels and ponies were turned loose as flames spread rapidly through the large brick building in which the animals were housed. Despite the roaring of the caged animals as they were enveloped in flames, the employees had no alternative but to keep them locked up.

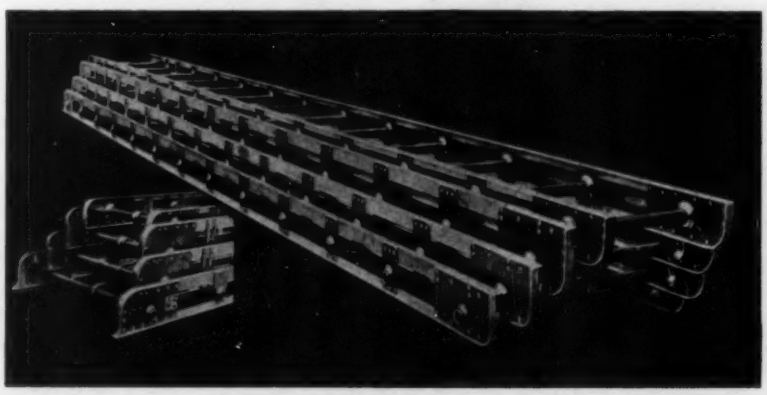
The blaze, believed to have been caused by a short circuit in a paint room, spread rapidly through the hay-filled building, along the electrical wiring. Most of the wagons, railroad cars, tractors, and other equipment were saved Many of the residents of Rochester assisted in rounding up the freed animals.

The total loss was estimated to be between $150,000 and $200,000.

"$25 Fire Chief" Resigns

Fire Chief Walter T. Banning, of New Philadelphia, Ohio, whose salary was slashed from $160 a month to $25 by an unfriendly city administration two years ago, resigned recently.

He will continue his work as Ohio's first instructor of firemen training.



The New Folding Ladder Showing the Rounded Edges

Truck Visits Restaurant

Firemen in Steubenville, Ohio, answered a call recently only to find that instead of a fire, they had been called to the scene of an accident.

After the Truck Made Its Sudden Call

A truck was going east down a hill at the bottom of which the truck was to turn north. The brakes did not hold and the truck just barely missed a gasoline truck that had been going in the opposite direction and which was making a turn south. Unable to make the turn, the runaway truck went through a restaurant, pushing tables and booths into the back wall. Although there was no fire, police, fire, and ambulance departments responded to the call.

103rd Meeting of Westchester Chiefs Held

One hundred and seventy-five members of the Fire Chiefs' Emergency Plan of Westchester County attended the 103rd meeting, held at Exempt Firemen's Headquarters, Yonkers, N. Y., on February 21st.

The meeting was presided over by Ex-Chief Roi Woolley, President. Among the special guests were Fire Commissioners Dean, Merritt, Blazej of Chappaqua, N. Y., Earl Krows of Hastings, N. Y., former President of the Plan, Wm. Coyle, Treasurer of the Hudson Valley Association, Asst. Chief Spring, Yonkers; N. Y. Chief Phillip Sheridan and Ex-Captain C. Brown of Port Chester, N. Y., and John Pokooney, Supt. of Fire Alarm, Mamaroneck.

A feature of the meeting was the adoption of a resolution by the Plan expressing sympathy to Asst. Chief Edward Siller of the Yonkers Fire Department and Treasurer of the Plan over his serious injuries. Every member present signed a special "Testimonial of Appreciation and Sympathy" which was later sent to Chief Siller, who is in Yonkers General Hospital.

The Plan went on record endorsing a bill presented to the Albany Legislature forbidding the sale or use of fireworks in the State. It had previously set in motion machinery to prohibit the sale or use of fireworks in the County, similar to the bill adopted in Nassau County. In this the Plan's Legal Committee is working closely with the Westchester Volunteer Firemen's Association.

The program of the meeting, under Chief John Brennan, Pelham Manor, was devoted to what was termed "Manufacturer's Night." Each of the manufacturer representatives who are members of the Plan were given an equal amount of time to "tell and sell" the members on what the have to offer. This presentation proved most educational and interesting. The lower floor of the Hall was given over to exhibits and after the meeting the members stayed into the "wee sma' hours" going into details over equipment and apparatus in which they were particularly interested.

Apartment Fire Described

Chief Carnegie, recently elevated to head of the Yonkers Fire Department, welcomed the Plan to Yonkers, and later told the story of how the firemen of that city fought the recent large apartment house blaze on the borderline of the Town of Eastchester. This was a $300,000 fire—the first at which Yonkers had ever had to summon the off-shift platoon, and the first in which Yonkers had ever had to call for outside aid. Chief Carnegie's thorough and practical explanation of the methods used in fighting the fire were well received and once again was shown the value of organized mutual aid.

Following the meeting the Exempt Association, and the Yonkers Fire Department served refreshments. The next meeting will be held in Hartsdale.

Firemen Fight Stubborn Warehouse Fire

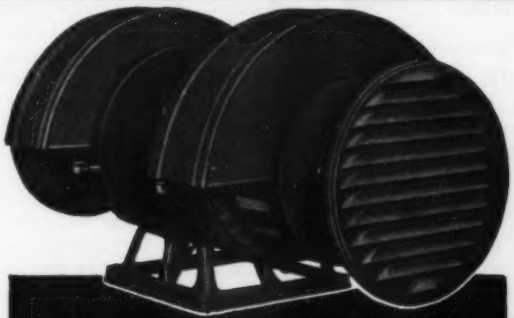
Every available piece of apparatus was called out in Portland, Me., to fight a fire in a warehouse in which was stored furniture, automotive supplies, large stocks of tea, and quantities of cloth.

The fire, believed to have started in the boiler room, had progressed well along by the time the firemen arrived. The fire was difficult to reach because of the dense clouds of smoke that enveloped the building. Flames rose from the basement to the roof, through partitions, elevator shafts, and stairwells.

Twenty lines were directed on the blaze, including two from aerial ladders, two turrent guns, high pressure guns, and more than ten hand lines. Low temperatures tended to handicap the firemen. Water quickly froze in the streets making footing dangerous. The total damage was estimated to be about $275,000.

Smoke Makes Fire Fighting Extremely Difficult

Firemen are shown directing streams into the warehouse fire at Portland, Me. This dense smoke was a consderable handicap to the fire fighters.



STERLING MODEL "M"

GENERAL ALARM SIREN

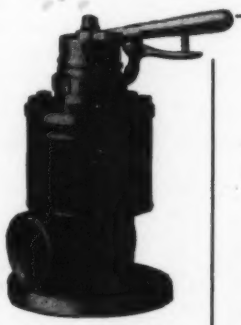
You Can Depend On It *ALWAYS*

Every community has need for a general alarm that will give unfailing service. Can you afford to depend on inadequate equipment, something new or of cheap quality?

Sterling's reputation for making quality sirens is world wide and dates back more than 36 years. Why experiment?

Send for Bulletin 631 which illustrates and describes the complete "Model M" system.

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York



1" - 1¼" - 1½"
CAPACITY TO 450 G.P.M.

Modernize Your Fire Apparatus With

ROSS

RELIEF VALVES

THEY are marvels in simplicity and adjustability, very rugged, responsive and the most dependable relief valves you can buy.

Made in sizes from 1 inch to 2½ inches, capacities up to 1,600 g.p.m. and pressures up to 750 lbs. Send for descriptive literature covering the complete line of ROSS Relief Valves.

ROSS VALVE MANUFACTURING CO.
TROY, NEW YORK

HERE'S FULL PROTECTION FOR 1 HOUR IN UNBREATHABLE AIR

LIGHT IN WEIGHT!

COMFORTABLE!

EQUIPPED with M.S.A. One-Hour Oxygen Breathing Apparatus, your men are capable of meeting any emergency requiring respiratory protection, including oxygen deficient atmospheres.

Offering every advantage of low breathing resistance, easy wearing comfort and excellent weight distribution, the Apparatus supplies the wearer with complete respiratory protection for at least one hour—even under great exertion—with perfect safety and efficiency. The unit is light in weight, compact, and permits unhampered working freedom.

Send for complete details of the M.S.A. One-Hour Oxygen Breathing Apparatus—also available in back-type model—and let us arrange an actual demonstration for you and your Department. No obligation of any kind!

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Streets
Pittsburgh, Pa.
District Representatives in Principal Cities

MINE SAFETY APPLIANCES CO. RESEARCH SERVICE SAFETY

THE M·S·A ONE·HOUR
OXYGEN BREATHING APPARATUS

Use Before and After

A Fire Is Out . . .

Here are two Homelite Portable Units that are saving time and money — and preventing accidents—for fire departments everywhere. They're two low cost units that any department can afford and use on fires of any size—as well as for emergencies such as drownings, floods and power interruption.

One For Putting Out Fires

Use the Homelite Portable Generator on night fires for brilliant floodlighting that men need for safety and fast work. Complete unit can be set up anywhere. No long cables. One man can carry it. *Weighs only 83 pounds* complete with built-in gasoline engine. Fully automatic. *Generates 1800 watts* with constant 120 DC voltage. Rugged, dependable, and weatherproof.

One For Cleaning Up Water

After a fire, a Homelite Portable Pump is ideal for overhauling. Pumps out cellars fast. Handles 15,000 gallons per hour. Has a 28 foot suction lift. Is self-priming. And does not clog with grit, mud, or other solids. Complete unit including built-in gasoline engine is compact—easy to get around. Weighs only 91 pounds. No manual attention. Automatic. Can be left without detaining a truck.

Send for Bulletin

Homelite

CORPORATION

803 Riverdale Ave., Port Chester, N. Y.

Alarm System

(*Continued from page* 108)

from the City Hall location to the new central station at Eden Park was approximately 4 hours and 20 minutes. The new central station went into operation at 5:53 P.M., on that date and there was no interruption to service at any time.

The engine house alarm and recorder installations and the teletype system were tested in January, and went into service completely on January 25. Service to all engine houses was maintained during these changes.

Cost of New System

Briefly stated, the new Fire Alam System* cost $260,000. The estimated cost was $285,000. And it provides the following:

A central station with facilities and capacity to serve approximately 1500 Fire Alarm Boxes and 60 engine houses.
983 Fire Alarm Signal Boxes
36 Engine houses equipped with alarm, recording and teletype systems.

During the planning and execution of the entire project, the most helpful and conscientious cooperation was rendered by the Fire Signal Service Department, operators and maintenance men, under the direction of Superintendent Charles S. Jones. The complete new circuit layout was arranged after an exhaustive study by Ass't. Superintendent A. W. Nightingale, who also handled the cutover of all circuits to the new central office in cooperation with Engineer Sanning.

System Considered Outstanding

This installation demonstrates that municipalities can, by retaining experienced consultation and engineering assistance, secure dependable systems of Fire Department Communications at reasonable costs and can complete their installations in a much shorter period of time by co-ordinating all the various activities under separate contracts for each section of the project.

As stated, the cost of the completed project, exclusive of architects and engineering fees, was about $260,000. It has been estimated that had the project been let under one general contract, without free and open competition, the cost would have been approximately $400,000.

*Which has 20% more capacity in central office and 171 more fire alarm boxes than was included in the original estimate.

During the first six weeks of operation at the new central office, the total number of alarms, both box and still, was 895 or nearly twice as much as the average demand. All alarms were handled with accuracy and dispatch.

The City of Cincinnati has a fire alarm signal and communications system which will be recognized as outstanding for a long time to come, and with other improvements now under consideration, may, in the near future, rank as the country's leading city in Municipal Communications—thanks to the vision and forethought of its City officials and Col. C. O. Sherrill, its City Manager.

Mine Fire

(*Continued from page* 111)

the ground over part of the area has been rendered unfit for use, oil wells have been destroyed, families in the area have been forced to move, and the paved highway between Shawnee and New Straitsville has buckled in several places.

With the work completed, and barriers in the fire's path, it is expected development of the coal lands will be resumed within a hundred feet of the barriers to the south. This has been frowned on for the past fifty years, and expense of setting up operations were considered "throwing money into the fire." The blaze was always able to break through in unexpected places, without much notice, destroying machinery, tipples and equipment.

Greensboro After Two Platoons

Agitation has been started at Greensboro, N. C., by friends of the Fire Department, for a two-platoon system for the local firemen. At present, the men have one day off in five.

The Daily News, a local paper, recently carried the following item to help the cause along:

"The Forgotten Men of Greensboro are the members of the Fire Department of our city. They are on duty an average of more than one hundred and twenty-eight hours per week. They are on duty four days, or ninety-six hours, of continuous duty at a time. Then they have a whole day off. Then they start another trick of ninety-six hours.

"For this service the city of Greensboro pays them about twenty-three cents per hour. They are the only servants of the city that work for this small wage.

"This confining service required of them by the city of Greensboro prevents them from attending churches, lodges, clubs, or in any manner of entering into the civic life of our city. This confining service prevents them from enjoying the home life of the average taxpayer; and they themselves are taxpayers.

"The remedy is a two-platoon system as was recently put into operation in High Point."

Freon Gas Is Not Inherently Dangerous

Negligence charges brought against five defendants by five New York City firemen in connection with a fire in which the plaintiffs claimed they were injured by toxic gases were dismissed by Justice Stoddart in Queens County Supreme Court in a decision that held freon gas "should not be classified as inherently dangerous."

The charges were brought in behalf of five firemen, allegedly injured by the gas during the fire. The defendants were a refrigeration manufacturer, two air conditioning concerns and the owners of a fur business and a building.

In dismissing the complaint after three weeks of plaintiff's testimony, Judge Stoddart said in his opinion no negligence had been shown. He decided also that the proof given was insufficient to show that the alleged injuries were caused by freon gas poisoning.

Judge Stoddart stated also that the firemen assumed the risks involved in fighting a fire.

Notice For Apartment Owners

Chief J. A. Falkner, South Euclid, Ohio, recently drew up an "Attention" notice for the occupants of apartment buildings, especially those in buildings where there are stores on the ground floor. It is believed that this notice will be helpful not only to the Fire Department in their Fire Prevention Work, but also to all parties concerned. The notice is as follows:

ATTENTION
TO THE OCCUPANTS OF THIS BUILDING

AS A PRECAUTIONARY MEASURE! IF AT ANY TIME ODOR OR SMOKE, GAS, OR OTHER DISTURBING ELEMENTS MAY BE DETECTED WITHIN THIS BUILDING, BE PREPARED TO LEAVE SAME IMMEDIATELY.

LEARN THE LOCATION OF ALL EXITS, ALSO NOTIFY THE FIRE DEPARTMENT AT ONCE.

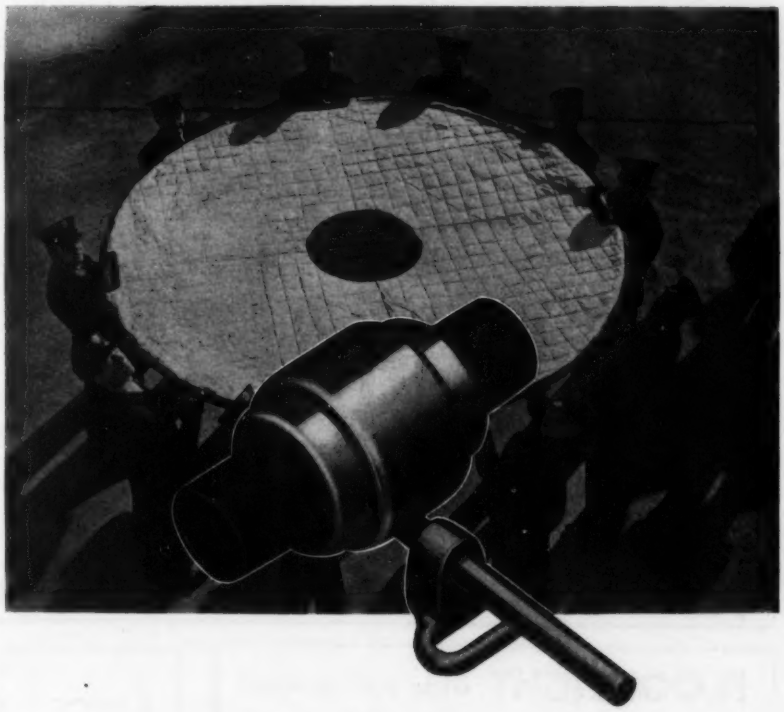
Phone.....
Signed.....
Chief of Fire Department

New York City's Fire Losses Up in 1939

Fire losses in New York City for the year 1939 were $8,600,544, an increase of $722,209 over 1938, Fire Commissioner J. J. McElligott reported to Mayor F. H. LaGuardia. The number of fires increased by 5,635, to 26,819. There was an increase in the number of suspicious fires by thirty per cent over 1938. The number of proven incendiary fires was the same in both years—126. Fifty-eight persons were arrested in 1938 for setting fire to buildings, while seventy-seven were arrested in 1939. Fires in dwellings and tenements showed an increase for the year, while factory fires showed a slight decrease. Nearly half the fires were traced to bonfires, brush fires, cigarettes, and careless smokers.

Chief McElligott explained that while the record for 1939 showed a slight increase in the fire loss over the previous year, the fact must be kept in mind that there is not a city in the country that has the vast problems in fire prevention and fire protection faced by New York City.

12 MEN CAN HOLD 12,000 POUNDS!



The "secret" is out—ATLAS DUAL PATENTED SHOCK ABSORBER—"1940 Feature." Note Carefully—it is PATENTED.

IMPACT—TERRIFIC IMPACT—a body of 160 pounds hurtling through space, gains a speed of 60 miles per hour (velocity from height of 70 feet)—and will exert a Force of Impact equal to 12,000 pounds when it hits that Life Net. Twelve Thousand Pounds!—wouldn't that mean that each of the men supporting the Net will have to hold almost a thousand pounds?

Yes! And they do hold a thousand or more pounds each—WITHOUT FEELING THE STRAIN of such terrific impacts. However, this could not be accomplished if it were not for the Atlas Patented Dual shock Absorbers found only on ATLAS LIFE SAVING NETS.

For detailed explanation of the above—write for technical particulars concerning a PERFECT ELASTIC BODY and its "restoring force."

ATLAS FIRE EQUIPMENT COMPANY

22-26 WARREN STREET NEW YORK

Full-fledged Gas Mask Protection— without Bulkiness!

#1600 FUMEGARD FACE MASK

This newly designed Pulmosan No. 1600 Fumegard Mask is constructed for toughest usage in conditions of smoke, noxious gases (except carbon monoxide), refrigerants, etc. Has a sturdy, all-rubber gas mask type face piece, with large shatterproof, non-fogging lenses—attached directly to a metal canister containing ¾ lb. of absorbents. Bulky straps, hose and chest canister are eliminated. Convenient and quick to put on. Firemen have greater freedom of action. The No. 1600 is safe, comfortable, much more economical than conventional gas masks. Get a No. 1600 Fumegard and test it.

PULMOSAN SAFETY EQUIPMENT CORP.

Dept. FE - 176 Johnson Street - Brooklyn, N. Y.

Rugged, compact one-piece unit for SMOKE and GASES

$10.00 F.O.B. Brooklyn, N. Y.

Postage prepaid in U. S. if payment accompanies your order.

RESOLVE TO GIVE YOUR FIREMEN AND COMMUNITY THE MOST MODERN EQUIPMENT.

SUPERIOR PRESENTS A NEW LIFE SAVING NET

TWICE AS STRONG AS ANY EVER PRODUCED

also

TRAINING NETS AND STRUCTURES
LADDER BELTS AND LIFE SIZE DUMMIES

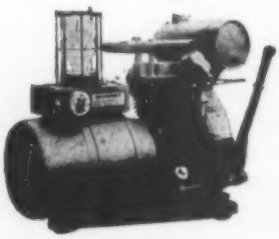
SUPERIOR FIRE EQUIPMENT CO., 72-76 Park Place, New York

WILLIAM MOELLER
DESIGNER
CONSULTANT

FLOODLIGHT with KATOLIGHT

portable light plants, 4 cycle, 600 watts, 60-cycle AC 110-volts. Also charge 6-volt battery from same plant. Runs electric drills, saws, etc.

Sizes 350 to 10,000 Watts



Write to

KATOLIGHT
105 ELM STREET
MANKATO, MINN.

CHIEF! Insist on the COLT when buying Shut-Off Nozzles

. . . and get the best

The unquestioned durability of the COLT has for twenty-five years been the subject of discussion among fire fighters.

When efficiency is demanded, the COLT has been found to be the easiest to operate, and will stand the severest test of strength and use better and longer than any other nozzle.

Furnished in three sizes—¾" and 1" for chemical hose, 1½" for leaderline work, 2½" for playpipes. Plain or rubber bumper tips furnished. All shut-off nozzles guaranteed for 5 years.

Write for catalog and name of dealer nearest you or see your regular supplier.

EXCELSIOR BRASS MFG. CO.
217-219 W. Illinois Street, Chicago, Illinois
Manufacturers of Fire Hose Nozzles for 25 Years

Every Fire Department Officer Should Have—

SIMPLIFIED FIRE DEPARTMENT HYDRAULICS

A 200 page book, fully illustrated, by Fred Shepperd, Editorial Director of FIRE ENGINEERING.

A complete course of instruction in fire department hydraulics. Designed to prepare fire department officers for hydraulic questions in examinations, such as required of all ranks.

Contains over 150 problems in fire department hydraulics asked in examinations in New York, Chicago, Milwaukee, Seattle, Newark, and a score of other large cities.

Treats fully all departments of fire department hydraulics, including pressure calculations, friction loss, engine and nozzle pressures, range of streams, capacities of engines, discharge from nozzles, hydrants, sprinklers, etc., etc.

Price—$2.00 Postpaid

Book Department

Case-Shepperd-Mann Pub. Corp.
24 West 40th Street New York, N. Y.

Convention Dates

April—FIRE CHIEFS OF MAINE. Quarterly meeting at Scarboro, Me. Secretary-Treasurer, Charles W. Bowker, South Paris, Me.

April—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual convention, West Palm Beach. Secretary, F. C. Pfaender, Box 344, Chattahoochee, Fla.

*April 17-20—ARIZONA STATE FIREMEN'S ASSOCIATION. Annual Convention, Phoenix. Secretary, H. W. Reggin, Box 813, Prescott, Ariz.

May—NATIONAL FIRE PROTECTION ASSOCIATION. Annual convention. Atlantic City, N. J. Secretary, Hovey T. Freeman, Providence, R. I.

May 8—DEL-MAR-VA VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention, Milton, Del. Secretary, George Mayer, Jr., Easton, Md.

May 8-10—GEORGIA STATE FIRE COLLEGE. Annual fire college, Atlanta. Director, Harry Phillips, 166 Atlanta St., S. W., Atlanta, Ga.

*May 13-15—NEW MEXICO STATE FIREMEN'S ASSOCIATION. Annual Convention, Hobbs, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque.

May 14—WEST TEXAS FIREMEN'S AND FIRE MARSHALS' ASSOCIATION. Meets at Munday, Tex. Secretary, E. C. Pruitt, Olney, Tex.

May 20-22 — NEW YORK STATE FIRE CHIEFS' ASSOCIATION. Annual meeting, Poughkeepsie, N. Y. Secretary, Chief Chris W. Noll, Poughkeepsie, N. Y.

*May 20-22—OKLAHOMA STATE FIREMEN'S ASSOCIATION. Annual convention, Clinton, Okla. Secretary-Treasurer, Charles Slemp, 1701 N. E. 63rd Street, Oklahoma City, Okla.

May 21-24—IOWA FIRE SCHOOL. 16th Annual Fire School, Iowa State College, Ames, Ia. Director of College, Prof. Lindon J. Murphy, University.

May 23—IOWA FIRE CHIEFS' ASSOCIATION. Annual convention, Ames, Ia. Secretary, L. R. Morris, Ames, Ia.

May 23-25—EASTERN FIRE CHIEFS' ASSOCIATION. Annual conference, Hotel Du Pont, Wilmington, Del. Secretary, Charles E. Clark, Box 217, Wayne, Pa.

May 25—IOWA FIRE CHIEFS' ASSOCIATION. 12th Annual Meeting, Ames, Ia. Secretary-Treasurer, Chief L. R. Morris, Ames.

*May 27-29, 1940 (tentative)—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual convention, Wilmington, Del. Secretary, Charles E. Clark, Wayne, Pa.

June 10-12—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. Meeting at Virginia, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

June 11—STATE FIREMEN'S AND FIRE MARSHALS' ASSOCIATION OF TEXAS. Annual convention, Houston, Tex. Secretary, Olin Culberson, Edna, Tex.

June 11-14—ILLINOIS FIRE COLLEGE. 16th Annual Fire College, Illinois Firemen's Association, University of Illinois, Champaign-Urbana, Ill. Prof. L. H. Provine, Director of School. Roy W. Alsip, Champaign-Urbana, Secretary.

*June 17-19—SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS, 13th Annual Convention, Memphis, Tenn. Secretary, Walter W. Stevens, Anniston, Ala.

June 18-21—PURDUE STATE FIRE SCHOOL. Fire school meeting, Lafayette, Ind. Assistant Director, Emmett Cox, Indianapolis, Ind.

June 19—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention, Bryan, Ohio. Secretary, J. W. Gardner, Ashland.

*June 25-27—NEW ENGLAND FIRE CHIEFS' ASSOCIATION. Eighteenth Annual Convention, The Balsams, Dixville Notch, N. H. Secretary, John W. Hearn, Watertown, Mass.

*June 26—ROCKLAND COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Twenty-Eighth Annual Convention, Haverstraw, N. Y.

*June 27-29—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. Fifty-First Annual Convention, Haverstraw, N. Y.

June—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual convention, Darlington, S. C. Secretary, Paul E. Welburn, Union, S. C.

July—FIRE CHIEFS OF MAINE. Quarterly meeting at Camden, Me. Secretary-Treasurer, Charles W. Bowker, South Paris, Me.

July 15-17—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. Annual meeting, Sturgenbay. Secretary, A. U. Simon, Lady Smith, Wis.

July 16-17—MARITIME FIRE CHIEFS' ASSOCIATION. Annual convention, Campbellton, N. B. Secretary, Charles A. Cunningham, St. John, N. B.

July 22-26—WEST VIRGINIA FIRE SERVICE EXTENSION SCHOOL. Tenth annual state fire school, West Virginia University, Morgantown, W. Va. Director, G. R. Spindler, 121 Mechanical Hall, Morgantown, W. Va.

July — WASHINGTON STATE FIREMEN'S ASSOCIATION. Annual convention, Port Angeles, Wash. Secretary, Hugh M. Leslie, Auburn, Wash.

Aug. — WEST VIRGINIA FIREMEN'S ASSOCIATION. Annual convention, New Martinsville, W. Va. Secretary, H. G. Fridinger, Martinsburg, W. Va.

Aug. — UTAH STATE FIREMEN'S ASSOCIATION. Annual convention, Logan, Utah. Secretary, John J. Creedon, Bingham Canyon, Utah.

Aug. — CONNECTICUT STATE FIREMEN'S ASSOCIATION. Annual convention, Danbury, Conn. Secretary, D. W. Harford, South Norwalk, Conn.

Aug. 5-6 — NEW YORK STATE FIRE FIGHTERS' ASSOCIATION. Annual convention, Schenectady, N. Y. Secretary, Frank A. Emden. 1403 Mather Ave., Utica, N. Y.

Aug. 4-5 — OHIO STATE VOLUNTEER FIREMEN'S ASSOCIATION. 2nd Annual Convention, Sandy Beach, Akron, Ohio. Secretary, Chief Sid Wellock, Coventry Township.

*Aug. 5-8 — INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Sixty-eighth Annual Conference, Davenport Hotel, Spokane, Wash. Secretary, James J. Mulcahey, Yonkers, N. Y.

Aug. 12-17 — NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual meeting, Salisbury, N. C. Secretary, John L. Miller, Concord, N. C.

Aug. 12-17—VIRGINIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Bristol, Va. Secretary, R. B. Barker, Newport News, Va.

*Aug. 13—FIRE CHIEFS' ASSOCIATION OF VIRGINIA. Annual Convention, Bristol, Va. Secretary, S. Herman Dennis, 1238 Chespeake Ave., South Norfolk, Va.

*Aug. 18-21—NEW YORK STATE FIREMEN'S ASSOCIATION. Twenty-first Annual Convention, Olean, N. Y. Secretary-Treasurer, Arthur Bleau, Bunn and Chestnut Sts., Amsterdam, N. Y.

Aug. 20-23 — FIREMEN'S ASSOCIATION, STATE OF NEW YORK. Annual convention, Dunkirk, N. Y. Secretary, Fred A. Davis, 140 Broadway, Fort Edwards, N. Y.

Sept. — NEW JERSEY STATE FIREMEN'S ASSOCIATION. Annual convention, Atlantic City, N. J. Secretary, Evan F. Benners, 24 Branford Pl., Newark, N. J.

Sept. — LOUISIANA STATE FIREMEN'S ASSOCIATION. Meeting at Thibodaux. Secretary, Edward Wright, Hocima, La.

Sept. 3-6 — MARYLAND SHORT COURSE FOR VOLUNTEER FIREMEN. Annual school at the University of Maryland, College Park, Md. Director, Chief J. W. Just, College Park, Md.

Sept. 3-5—KENTUCKY FIREMEN'S ASSOCIATION. Meeting at Bowling Green. Secretary, V. A. Beam, 2221 W. Broadway, Louisville, Ky.

*Sept. 11-12 — DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. Twentieth Annual Convention, Smyrna, Del. Secretary, Warren W. Pettyjohn, Dover, Del.

Sept. 16-17—TEMISKAMING FIREMEN'S ASSOCIATION. Annual convention, New Liskeard, Ont. Secretary, F. E. Thompson, New Liskeard, Ont.

Sept. 17-18—IOWA FIREMEN'S ASSOCIATION. Meeting at Emmetsburg, Ia. Secretary, Paul A. Soener, Independence, Ia.

Sept. 23-26—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual meeting, San Jose, Cal. Secretary-Treasurer, Harry E. Strasser, 2046 Oregon Ave., Long Beach, Cal.

Oct. — FIRE CHIEFS OF MAINE. Quarterly meeting at York Harbor, Me. Secretary-Treasurer, Charles W. Bowker, South Paris, Me.

Oct. — ARKANSAS STATE FIREMEN'S ASSOCIATION. Meeting at Russellville. Secretary, H. D. Compton, Little Rock, Ark.

Oct. 1—FIREMEN'S ASSOCIATION, STATE OF PENNSYLVANIA. Annual meeting, Lewiston, Pa. Secretary, Charles E. Clark, Wayne, Pa.

Oct. 4—WALWORTH COUNTY FIRE OFFICERS' ASSOCIATION. Annual meeting, East Troy, Wis. Secretary, C. A. Foster, Lake Geneva, Wis.

*The notices marked with an asterisk are either appearing for the first time or have been changed since the preceding issue.

FIRE CHIEFS

Did you ever travel from the northern boundary of New York City to the western limit of Philadelphia? That is a distance of over 100 miles.

Yet an order just delivered, if coupled in one continuous length, would exceed that distance . . . and that order was for

576,000 Feet QUAKER Fire Hose

You will never have occasion to order that many feet at one time. But regardless of whether you order 100 feet or 10,000 feet, QUAKER is ready to serve you promptly.

Multiple Jacket Hose made in four distinct and different constructions.

Get in touch with Quaker before placing your order for Fire Hose. Samples gladly furnished.

QUAKER RUBBER CORPORATION

(formerly Quaker City Rubber Co.)

Main Office and Factory: **PHILADELPHIA**

Branches:

NEW YORK • CHICAGO • HOUSTON • SAN FRANCISCO

FALSE ALARMS

"My Gosh! Now she's tossing out the bookcase!"

HOT GAME

Even the firemen can testify that the basketball game between two Indiana high schools was a hot one.

During an exciting part of the game the gymnasium caught on fire from an overheated stove. As a result, the players took time out and fought the blaze. They then went on with their game.

It isn't easy to tell cow-skin from calf skin, for the cow is the calf's kin, and the calf is the cow's kin.

SHE RANG THE BELL

A twelve-year-old girl in a Massachusetts school was given a special honor. She was permitted to ring the school bell. It was a honor that is now no longer hers.

It seems that the principal told the girl to go into the office and ring the recess bell. Instead of seeing a bell button, she saw a hook and pulled that. As a result, six fire units called, plus an emergency wagon, a police car and several patrolmen.

It takes a lot of horse sense to maintain a stable department.

SLIGHT ERROR

A resident in a Nevada city dialed 3131. That is the department number and the men quickly responded. Shortly after, the station received another call from this same person.

"Sorry," the person said in apologetic voice. "I meant to call a taxicab."

One of Life's greatest tragedies is the murder of a beautiful theory by a gang of brutal facts.

VERY DUMB

The telephone rang at Fire Headquarters and the man in charge answered:

"Yes, this is Fire Headquarters."

"Say," said the voice at the other end, "there's a fire in my house, and I want you to tell me where the nearest fire alarm box is. I want to send in an alarm."

A USELESS RELATIVE

A young beggar in the big city was asking for some money. "Please help a poor boy, with no father or mother, and no one to help him," he said.

A kind-hearted fireman stopped to talk to him.

"Have you really no father?", he asked.

"None at all," said the beggar lad.

"And no mother?"

"None."

"No brothers or sisters?"

"Just one brother," said the beggar.

"And where is he?"

"He is in the medical school in Dublin."

"In the medical school? Surely he can do something to help you?"

"No, he can't do anything for me."

"And why not?"

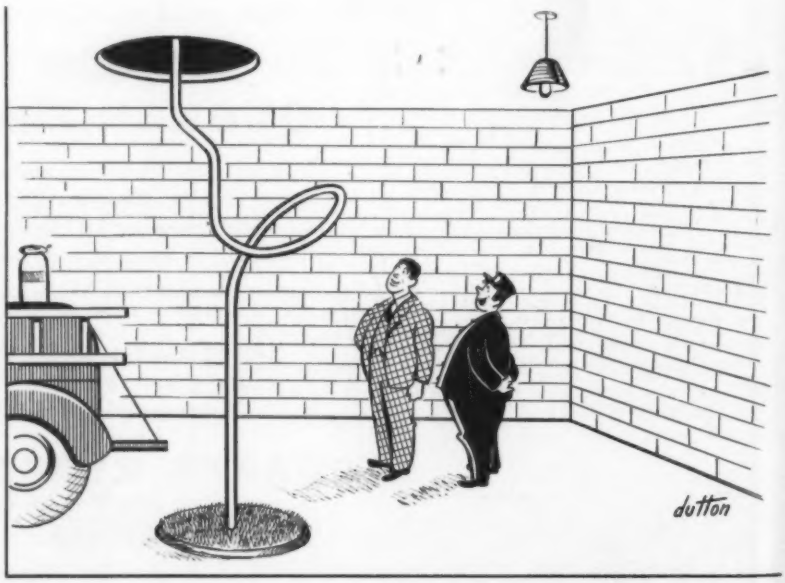
"Because he was born with two heads, and they keep him in a bottle."

NEEDED A START

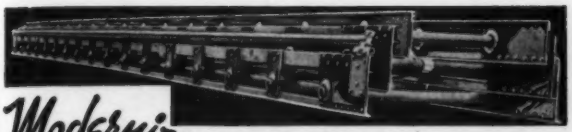
In the Great War a company of soldiers found themselves under a hot fire, and took refuge in a shell hole. The Captain said:

"Boys, I'm afraid we are in a tight spot. Fight like the devil until your last cartridge is gone, and then run. I'm a little lame, so I'll start now."

The smoothest running thing about a car is the salesman's tongue.



"If they can make it, we figure they're ready for anything!"



Modernize WITH ALUMINUM LADDERS

Their light weight permits men to get into action faster at fires. Their great strength, together with the fact that they bend rather than break suddenly under overloads, makes them extraordinarily safe. Aluminum ladders do not deteriorate in any way—upkeep bills are eliminated. When ordering new trucks or replacement ladders, specify ALUMINUM ladders.

"The FIRST Cost is the LAST Cost"

Aluminum Ladder Company

200 FIFTH AVENUE TARENTUM, PA.

WATEROUS COMPRESSION FIRE HYDRANTS

Waterous Dependable

ESTABLISHED 1886

WATEROUS COMPANY - ST. PAUL

A PARTIAL LIST OF ELKHART PRODUCTS

Shut-Off Nozzles
Controlling Nozzles
Turret Pipes
Fire Department Extinguishers
Extinguisher Holders
Fire Truck Body Fittings
Hose House Equipment
All Types Hose Couplings
Sliding Poles, Railings and Canopies
Fog Nozzles
Hose Test Pumps
Threading Tools
Coupling Expanders
Pump and Hydrant Valves
Hose Racks and Cabinets
Siamese Connections
Underwriters' Industrial Extinguishers

34 years service in the fire field

Prompt service Quality products

Send for illustrated folder on the New Elkhart Mystery Nozzle.

ELKHART BRASS MFG. CO.

ELKHART, INDIANA

WIG-WAG MASTER-LIGHTS

Type "WO"—the oscillating red beam that silently clears the way 1,000 feet ahead.

FASTER, SAFER RUNS

Write for catalog. This is only one of 70 MASTER-LIGHTS. Lights sent on approval to city departments.

CARPENTER MFG. CO.

200 SIDNEY ST., CAMBRIDGE, MASS.

COVER'S NOD and SHAKE SMOKE MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke and saves the lungs.

Why get sick?

Price $48 per Dozen

Upon receipt of $4.00 one will be forwarded as a sample, postpaid.

H. S. COVER

Station A, SOUTH BEND, IND.

HEWITT-GUTTA PERCHA FIRE HOSE

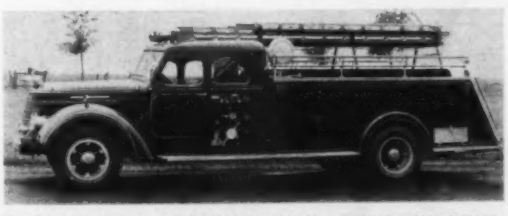
A complete line, including Wax Treated - Solid Multiple Woven AND Single and Double Jacket Hose

Manufactured by

HEWITT RUBBER CORPORATION

BUFFALO, N. Y.

"Territories Available"



THIS IS KNOWN AS PENNSYLVANIA'S PRIZE WINNING FIRE TRUCK

Recently delivered to Derry, Pa., it took first prize at over a dozen County Tournaments. This equipment is mounted on an International D50 chassis, 120 h.p. engine. It carries a 50-ft. aluminum ladder on top while other equipment is mounted within the hose body.

NATIONAL FIRE APPARATUS CO.

Galesburg, Illinois

EDDY Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.

Waterford, N. Y.

James B. Clow & Sons, Chicago Agents

Announcing

THE FIREMAN'S

ACME

ALL PURPOSE GAS MASK *with these exclusive features*

1. PROTECTION AGAINST CARBON MONOXIDE, OTHER GASES, AND SUFFOCATION BY SMOKE.
2. ACME FULL VISION.
3. LONG-LIFE ALL PURPOSE CANISTER.
4. CHEMICAL WARNING WHEN APPROACHING END OF CANISTER LIFE.

For All Services: This Mask protects against 2% Carbon Monoxide (CO), Illuminating Gas, 2% Acid Gases, 2% Organic Vapors, 3% Ammonia, also ALL SMOKES, Dusts, Fumes and Mists; or 2% total of poisonous gases when more than one gas is present.

Hopcalite Catalyst: Acme's hopcalite catalyst is of the highest quality and is fully capable of converting Carbon Monoxide to Carbon Dioxide in the best accepted manner. Acme's hopcalite is manufactured to meet the exacting requirements of the U. S. War Department.

Acme Full Vision: With this Mask the fireman sees the same as when not wearing a mask. Regardless of the kind of weather and temperature, there need be no fogging of Acme Full Vision Safety Glass Lenses. Full Vision —exclusive in Acme Masks —means safety and better working ability at fires.

Warning Agent: Acme All Purpose Canisters contain a chemical warning agent that warns the wearer that the life of the Canister is nearing the end. Harmless though it is, this Warning Agent will give an unmistakable warning. There are no indicators nor timing devices to watch or get out of order—the warning is positive and the wearer will always know that it is time to get out to fresh air.

STOP BREATHING SMOKE—AVOID SUFFOCATION! The Acme All Purpose Gas Mask protects against ALL SMOKES and fumes. With Acme Mask protection, smoke suffocation is impossible. Do your present Canisters actually protect against suffocation? Write us today for FREE "Canister Smoke Tester"—it will be mailed to you postpaid with complete instructions. Your firemen work in smokes—protect them! Send also for Folder M401, which describes the Acme All Purpose Gas Mask.

Manufactured Exclusively by

Acme Protection Equipment Co., Inc.
3604 Liberty Ave., Pittsburgh, Pa.

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MARCH, 1940

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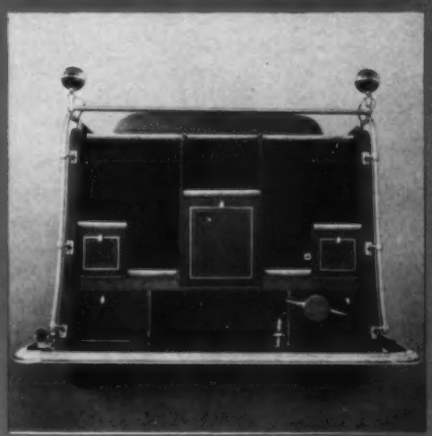
Pirsch Enclosed Triple Combination Pumping Engine Delivered to Cambridge, Mass.



Rated Capacity 1000 G.P.M.

Length, 27'
Weight, 16,400 lbs.
Wheelbase, 193"

Seating Facilities For Seven Men

Rear view showing compartments for hose, ladders, pike poles, etc.

Pump compartment (door open) contains gauges, instruments, etc.

In addition to above modern pumper, the City of Cambridge has 1 85 and 1 100' Pirsch Hydro-Mechanical Aerial Ladder Trucks in service

PETER PIRSCH & SONS CO., KENOSHA, WIS.

A COMPLETE LINE OF EUREKA *Streamlined* FIRE HOSE

The only complete line offering you Multiple-Woven, Double-Jacket, and Single-Jacket types of construction in various grades and prices. Each construction is available with such exclusive EUREKA developments as:

STREAMLINED—accomplished by the Smooth-Interior Filler-Ply . . . making the inner surface smooth and level . . . eliminating "washboarding" . . . assuring maximum pressure at the nozzle.

BOMB-TESTED RUBBER LINING—4 plies of heat-resisting long-lived rubber. Through the oxygen bomb-test, the superior aging characteristics of this EUREKA rubber lining have been proved.

MILDEW-PROOF FABRICS—the Fabrics used are antiseptically treated to prevent the formation of mildew and rot.

For those Fire Departments that frequently operate in sub-freezing temperatures, EUREKA offers a complete line of Wax and Gum Double- and Single-Jacket Fire Hose.

For Greater Protection to Lives and Property . . . SPECIFY

EUREKA FIRE HOSE

DIVISION OF UNITED STATES RUBBER COMPANY

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